

Standard Road Plans

Standard Road Plans are listed on road sheet C.3. & RC.5

Design Data Rural		
2027 AADT	2,594	V.P.D.
2047 AADT	3,040	V.P.D.
2047 DHV	314	V.P.H.
TRUCKS	21	%
Total Design ESALs	1,775,200	

Index of Seals		
Sheet No.	Name	Type
A.1	Kevin L. Arp (Kirkham Michael)	Structural Design
A.3	Kyle Schrock (Iowa DOT)	Roadway Design
CS.1	Xinyi Jiang (Braun Intertec)	Geotechnical Design
SPS.1	Xinyi Jiang (Braun Intertec)	Geotechnical Design
RC.1	Rachel Harris (Iowa DOT)	Erosion Control
V.4	Jaclyn Gutman (HR Green)	Hydraulic Design

Iowa DOT Bridges and Structures
Consultant Coordinator Contact:
Zahrah Alghalibi

Index of Sheets	
No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design 127
V.2 - V.23	Design 127
SPS Sheets	Bridge Plan Soils Sheet
SPS.1 - SPS.2	Bridge Plan Soils Sheet
Road Sheets	Road Plan
A.3 - W.9	Road Plans
C.1 - C.2	Estimated Quantities - Road
C.3	Standard Plans - Road
RC.2	Estimated Quantities - Erosion Control
RC.5	Standard Plans - Erosion Control

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM ADAMS COUNTY

Bridge Replacement-CCS

US 34 over Metz Creek, 2.3 miles West of W. Jct. IA 25

Refer to the Plan Sheets for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



Revisions

	TOTAL
	85
PROJECT IDENTIFICATION NUMBER	
22-02-034-010	
PROJECT NUMBER	
BRF-034-3(039)--38-02	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
0203401022	

Structural Design



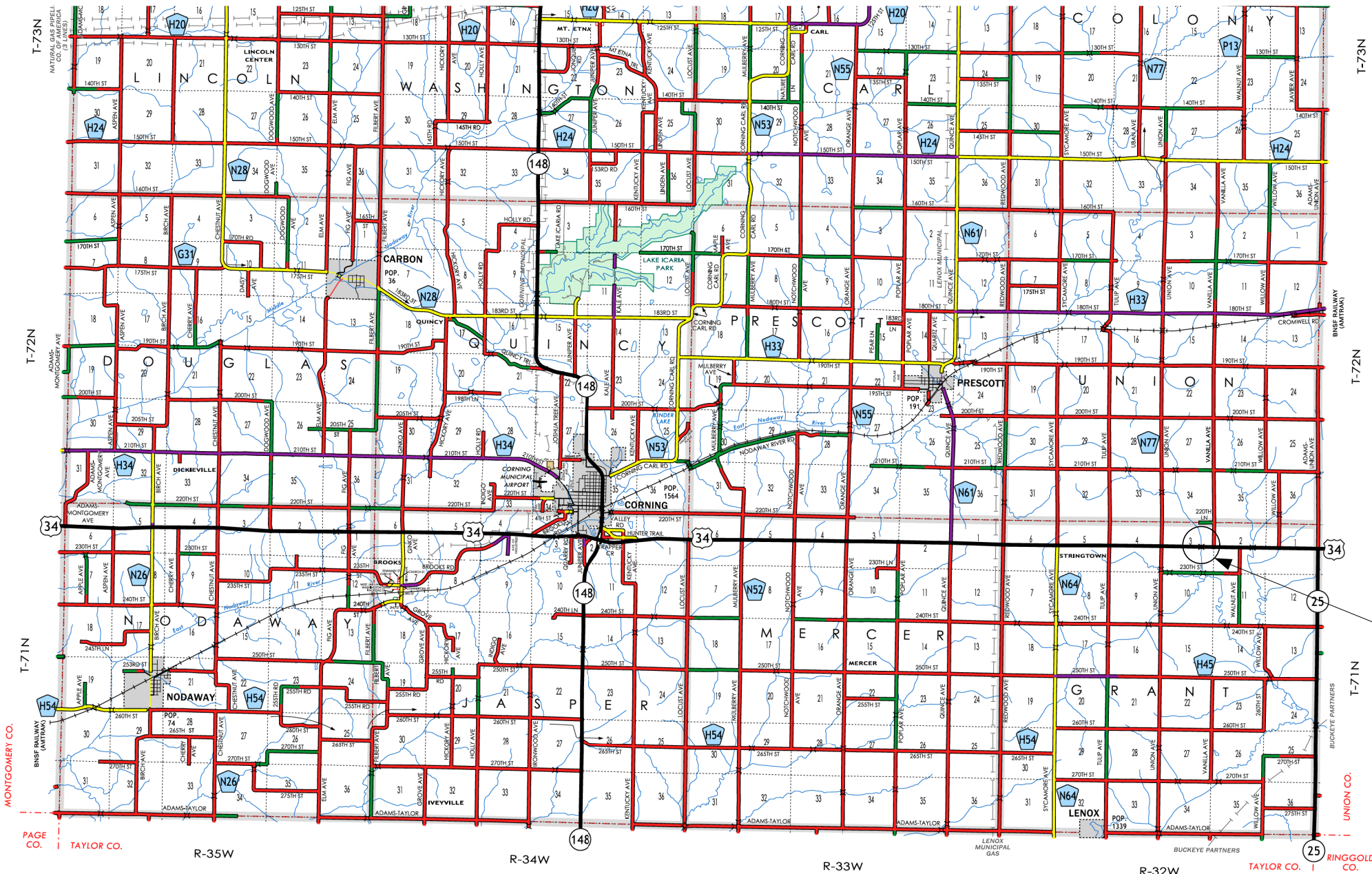
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Kevin L. Arp, P.E. Date 7-17-2026

Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: A.1-A.2, V.1-V.3, V.7-V.23



LEGEND

INTERSTATE HIGHWAY

PRIMARY HIGHWAY-DIVIDED

PRIMARY HIGHWAY

PORTLAND CEMENT CONCRETE ROAD

ASPHALT ROAD

BITUMINOUS ROAD

GRAVEL ROAD

EARTHEN ROAD

INTERSTATE HIGHWAY

UNITED STATES HIGHWAY

STATE HIGHWAY

COUNTY HIGHWAY

RAILROAD

PIPELINE

AIRPORT

HYDROLOGY

BRIDGE

STATE BOUNDARY

COUNTY BOUNDARY

CORPORATE BOUNDARY

TOWNSHIP LINE

SECTION LINE

ROAD NAMES

UNINCORPORATED PLACE

STATE PARKS

STATE INSTITUTIONS

FEDERAL LAND

80

65

237

52

+

+

+

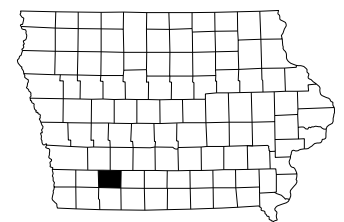
ABBAY ROAD

ELWOOD

Adams County Location Map

Not To Scale

Design No. 127
FHWA No. 013331



Estimated Bridge Quantities and Reference Notes - Design #0127					
Item No.	Item Code	Item	Unit	Quantities Estimated Design No. 127	Estimate Reference Notes
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	788.8	Includes excavation for revetment and channel shaping as shown on situation plans. All waste must be removed from the project site.
2	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1	Includes all cost for removal of existing 50'-0" X 30'-0" I-Beam Bridge, Design No. 158, Sta. 624+59.94. Includes all work for removal and off-site disposal of the existing bridge by stages in these plans. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and shall be repaired at no extra cost to the State. Includes removal of existing 4" articulating block mat. Existing abutment footing is to be completely removed and pile are to be cut off. Existing piles shall be removed 1' below proposed grade. All salvageable material and unsalvageable material shall become the property of the Contractor and shall be removed from the site by the Contractor. Contractor to add the following information when submitting the Iowa DNR "Notification of Demolition" Form: Name of asbestos inspector: Brad Azeltine Date inspected: 12/23/2024 IA License number: Iowa DOT Inspector phone: 515-239-1938 Asbestos present: No Procedure used to detect the presence of asbestos materials: Polarized Light Microscopy (PLM)
3	2402-2720000	EXCAVATION, CLASS 20	CY	210.0	Includes excavation for bridge abutments.
4	2402-2721000	EXCAVATION, CLASS 21	CY	109.0	Includes excavation for bridge piers.
5	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	391.2	Includes concrete for abutments and slab. Includes all resilient joint filler required. Includes furnishing and placing subdrain (including excavation), floodable backfill, porous backfill, geotextile fabric, water flooding, and subdrain outlet at abutments and toe of berm. Includes furnishing and placing concrete sealer at floor drains on Design Sheet V.13. Includes furnishing and placing 3 inch diameter PVC plastic pipe and expanding foam in the abutment wings. Includes cost of 4 drains at 39 lbs. steel per drain.
6	2403-1000005	FIBER REINFORCEMENT FOR STRUCTURAL CONCRETE	CY	359.8	Includes concrete for the slab, abutment diaphragms, wings and pier caps. Refer to Developmental Specifications for Fiber Reinforcement for Structural Concrete for additional information.
7	2403-1000010	TRIAL BATCH AND TEST PLACEMENT (FIBER REINFORCED CONCRETE)	LS	1	Trial Batch and Test Placement for Fiber Reinforced Structural Concrete (Bridge). Refer to Developmental Specifications for Fiber Reinforcement for Structural Concrete.
8	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	62,720	--
9	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	23,288	Includes stainless steel in deck, substructures, railing, and approach slab dowels scheduled on Design Sheets V.11, V.15, and V.20. Includes cost of mechanical splices for transverse bars as shown in the plans. Stainless steel reinforcing shall be deformed bar grade 60 meeting the requirements of I.M. 452.
10	2414-6425110	CONCRETE BARRIER RAILING	LF	242.0	If placement of concrete is done by the slipforming method, Class BR concrete is required. Cast-in-place barrier rails shall use Class C mix. Price bid for this item shall include the cost of cast-in-place forms if required for placement of the concrete.
11	2501-0201042	PILES, STEEL, HP 10 X 42	LF	1,050	Includes furnishing and installing steel pile points.
12	2501-0201253	PILES, STEEL, HP 12 X 53	LF	1,705	Includes furnishing and installing steel pile points.
13	2501-5478053	CONCRETE ENCASEMENT OF STEEL H PILES, HP 12 X 53 (P10L TYPE 3)	LF	374	Includes furnishing and placing all materials and any necessary excavation.
14	2501-8400172	TEMPORARY SHORING	LS	1	Includes all cost for designing, furnishing, installing and removing temporary shoring.
15	2507-2638650	BRIDGE WING ARMORING - EROSION STONE	SY	12.6	Includes furnishing and placing engineering fabric, erosion stone, and all required excavating, shaping and compacting for wing armoring.
16	2507-3250005	ENGINEERING FABRIC	SY	1,112.2	Engineering fabric shall be material as specified for embankment erosion control in accordance with Article 4196.01.B.3 of the Standard Specifications.
17	2507-6800061	REVETMENT, CLASS E	TON	1,242.5	Estimated at 1.5 ton/cu yd. Class E revetment shall meet the requirements of Article 4130. Broken concrete and granite is not allowed.
18	2507-8029000	EROSION STONE	TON	19.8	Estimated at 1.6 ton/cu yd. Erosion Stone shall meet the requirements of Article 4130. Broken concrete and granite is not allowed.
19	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1	
20	2533-4980005	MOBILIZATION	LS	1	

Roadway Quantities shown
elsewhere in these plans.

Design For 0° Skew

110'-0" x 44'-0" Continuous
Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

Estimated Quantities

STA. 624+60.00 (US 34)Turn-In Date: August 2026

Adams County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 1 of 23FHWA No. 013331

General Notes:

This design is for the replacement of the existing 50'-0" x 30'-0" I-Beam bridge, on US 34 over Metz Creek, Design No. 158, FHWA No. 013330, Maint. No. 0273.8S034 with a year of construction of 1921/Reconstructed 1959, with a 110'-0" x 44'-0" Continuous Concrete Slab Bridge. Electronic plans of the existing bridge are available to the contractor as part of the e-files supplied with the contract documents.

The lump sum bid for "Removal of Existing Bridge" shall include removing the existing 50'-0" x 30'-0" I-beam bridge as shown in these plans.

Removals shall be in accordance with Section 2401, of the Standard Specifications.

This bridge is designed for HL-93 loading plus 20 lbs. per square foot of roadway for future wearing surface.

Concrete barrier rails placed using the slipform method will require the use of a Class BR concrete in accordance with Article 2513.03, a, 2, of the Standard Specifications. Cast-in-place barrier rails shall use Class C mix. Class D concrete is not permitted for concrete barrier rails (cast-in-place or slipformed method).

It shall be the bridge contractor's responsibility to provide sites for excess excavated material. No payment for overhaul will be allowed for material hauled to these sites.

The Utility Companies whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Bridge Contractor of the construction starting date.

This bridge will be built in stages and the falsework for Stage 1 construction shall remain in place until stage 2 is complete. The stage 1 false work shall be removed with the stage 2 falsework.

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

These bridge plans label all reinforcing steel with the English notation (5a1 is 5⁄8 inch diameter bar). English reinforcing steel received in the field may display the following "bar designation". The "bar designation" is the stamped impression on the reinforcing bars, and is equivalent to the bar diameter in millimeters.

English Size	3	4	5	6	7	8	9	10	11
Bar Designation	10	13	16	19	22	25	29	32	36

All reinforcing bars and bars noted as dowels supplied for this structure shall be deformed reinforcement unless otherwise noted or shown.

Keyway dimensions shown on the plans are based on nominal dimensions unless stated otherwise. In addition, the bevel used on the keyway shall be limited to a maximum of 10 degrees from vertical.

Temporary shoring (sheet pile or other) shall be required as necessary to prevent the earth under the traffic lane from sloughing in during construction.

The Contractor shall submit a Temporary Shoring Plan for review. The Temporary Shoring Plan shall be designed and certified by a Professional Engineer licensed in the State of Iowa. The Contractor shall not proceed with installation of the temporary shoring without notice to proceed from the Engineer.

- The temporary shoring submittal shall include:
- Design calculations (including a global stability analysis)
 - Soil properties
 - Shoring material properties
 - Shoring plan layout (showing location of traffic)
 - Shoring details

Temporary shoring shall be paid for as a lump sum including all cost for designing, furnishing, installing, and removal. All material used for shoring shall remain the property of the Contractor. Shoring is to be removed after backfilling has been completed. In addition to the requirements noted above Article 1107.07 of the Standard Specifications, still applies.

The pier pile encasements are to be as detailed and noted on Design Sheet No. 10, as shown in these plans. The unit price bid for encasement shall be full payment for furnishing and placing all material and necessary excavation. The piling encasements are to extend from the bottom of pier cap to elevation shown.

Bridge deck finishing machine screed rails shall not be placed on previously poured stages of the deck or on the decks of existing structures. Screed rails shall ordinarily be placed on beam overhang formwork or, when necessary due to space limitations, directly over a beam. The Contractor is responsible for the structural adequacy and functionality of the support system for the screed rail and finishing machine.

Faint lines on the plans indicate the existing structure.

The Bridge Contractor is to retain earth and/or granular material behind the portion of abutments subjected to traffic during construction stages by methods approved by the Engineer. All costs for retaining the earth and/or granular material shall be included in the price bid for "Class 20 Excavation".

The Bridge Contractor is to provide a method of removal that will prevent feather edging at the bottom of the existing slab. Care shall be taken when exposing existing reinforcing so the bond to existing concrete is not broken at the concrete break lines.

Construction shall be done in stages with at least one lane traffic maintained at all times in accordance with "Traffic Control Plan" note.

Cast in-one-piece steel pile points are required for all abutment and pier piles in accordance with Article 4167.02 of the current Standard Specifications and Materials I.M. 468.

A scrape sample was taken from an abutment bearing and a beam of this bridge to get an indication of the existence of and level of total lead and total chromium. Analysis of total lead on this sample was 203 parts per million (ppm) at the abutment bearing and 54.3 parts per million (ppm) at the beam. Analysis of total chromium on this sample was 83.8 ppm at the abutment bearing and 75.2 ppm at the beam. These analyses show the existence of these two toxic constituents. Levels indicated by these tests could create conditions above regulatory limits for health and safety requirements. No other constituents were analyzed. The Bidder should not rely on the Iowa DOT's testing and analysis for any purpose other than as an indication of the existence of these two toxic constituents.

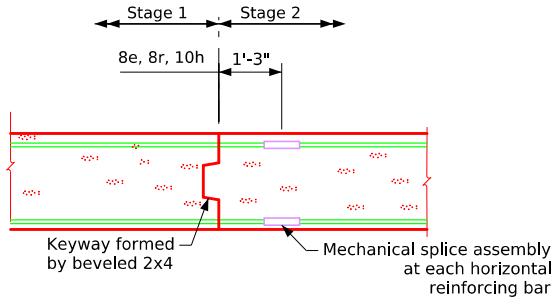
Design History at this Site (Includes this Design)	
Des. No.	Type of Work
2329	Original Design
158	Deck Replacement
179	ACC Overlay
586	Barrier Rail Replacement
127	Bridge Replacement

Pollution Prevention Plan shown elsewhere in these plans.

Traffic Control Plan
Note: The roadway will be open to thru traffic. Refer to the traffic control plan shown elsewhere in these plans.

Bridge Deck Dimension Table			
No.	Item	Unit	Quantity
1	Deck Length	L.F.	110.83
2	Minimum Deck Width	L.F.	47.17
3	Maximum Deck Width	L.F.	47.17
4	Deck Area	S.F.	5228

1. Deck length is measured from face-to-face of paving notches along the centerline of the roadway.
- 2, 3. Deck widths are measured from out-to-out of deck perpendicular to the centerline of roadway.
4. Deck area is to be based on the face-to-face paving notch distance and out-to-out deck dimensions.



Mechanical Splice Detail

Mechanical Splice Assembly Notes:

The 10h3-10h6 and 8e1-8e2 bars in the superstructure and the 8r1-8r2 bars in the abutment footing shall be spliced at the locations shown using mechanical splice assemblies. The mechanical splice assemblies used shall meet the requirements of Materials I.M. 451 and Standard Specification 4151.07. Reinforcing splice bars shall have a minimum diameter equal to the diameter of the corresponding bar which the splice bar is lapped with. All mechanical splice assemblies to be used shall be stainless steel. The cost of furnishing and installing all mechanical splice assemblies is to be included in the price bid for "Reinforcing Steel, Stainless Steel." The weight of mechanical splice assemblies is not included in the quantity shown for "Reinforcing Steel, Stainless Steel."

A total of 8 stainless steel splice assemblies will be required for each monolithic pier cap. A total of 9 stainless steel mechanical splice assemblies will be required for each abutment. A total of 7 stainless steel splice assemblies will be required for each abutment footing.

Specifications:

Design:
AASHTO LRFD Bridge Design Specifications, 10th Ed., Series of 2024, except as noted in the current Iowa Bridge Design Manual.

Construction:
Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.
Developmental Specifications - Fiber Reinforcement for Structural Concrete

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO LRFD Bridge Design Specifications, 10th Ed., Series of 2024, except as noted in the current Iowa Bridge Design Manual.
Reinforcing steel in accordance with AASHTO LRFD Section 5, Grade 60 for epoxy coated and non-coated, and Grade 60 or 75 for stainless.
Concrete in accordance with AASHTO LRFD Section 5, f'c = 4.0 ksi.
Structural steel in accordance with AASHTO LRFD Section 6. ASTM A709 Grade 36, Grade 50, and Grade 50W (AASHTO M270 Grade 36, Grade 50, and Grade 50W).
n=8 for tension steel
2n = 16 for compression steel
HL-93 live load plus 20 lbs. per sq. ft. for future wearing surface.
End span length is used to calculate equivalent width in live load distribution.
Six foot of approach slab dead & live load included in abutment loads.
Control of cracking by distribution of reinforcement for slab design based on the AASHTO LRFD Bridge Design Specifications, 10th Ed., Series of 2024.

Working Drawing and Calculation Submittals

Working drawings and calculations shall be submitted for the following items shown in the table below. (Note additional working drawings and calculations may be required in accordance with Article 1105.03 of the Standard Specifications.)

Submittal requirements for working drawing and calculations shall be in accordance with 1105.03 of the Standard Specifications for Highway and Bridge Construction of the Iowa Department of Transportation. The absence of a certification requirement for a submittal does not relieve the Contractor of the responsibility to attain certification.

Calculation submittals in this table which are associated with working drawing submittals shall be submitted on the same day. Review time for calculation submittals shall be of the same duration as and run concurrently with review time for associated working drawings. The calculation submittals listed in the table are not meant to be an exhaustive list and do not relieve the Contractor from providing additional calculation submittals if requested by the Engineer.

No.	Working Drawing Description	Working Drawing File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1	Deck Drains	(039)_Adams_Design127_Deck Drains.pdf	No
2	Falsework	(039)_Adams_Design127_Falsework.pdf	Yes
3	Temporary Shoring	(039)_Adams_Design127_TempShore.pdf	Yes
No.	Calculation Description	Calculation File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1	Falsework	(039)_Adams_Design127_Falsework_Calcs.pdf	Yes
2	Temporary Shoring	(039)_Adams_Design127_TempShore_Calcs.pdf	Yes

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

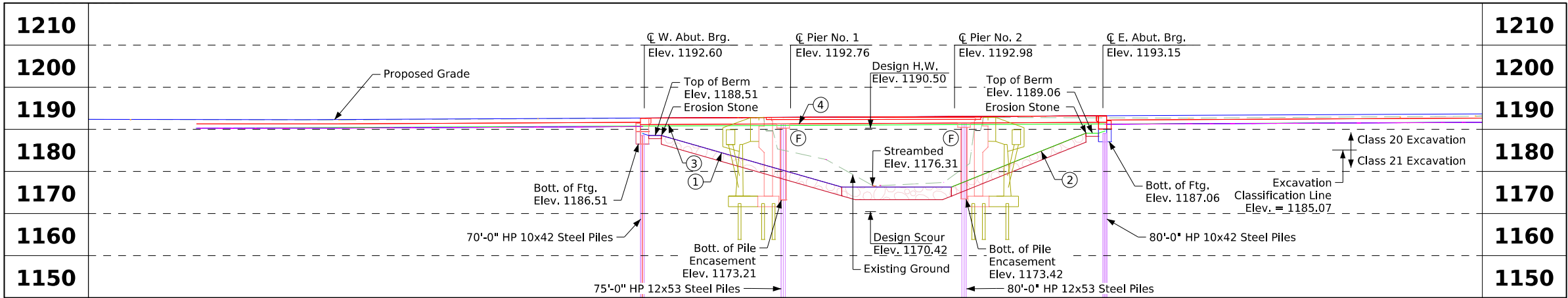
General Notes

STA. 624+60.00 (US 34)Turn-in Date: August 2026

Adams County

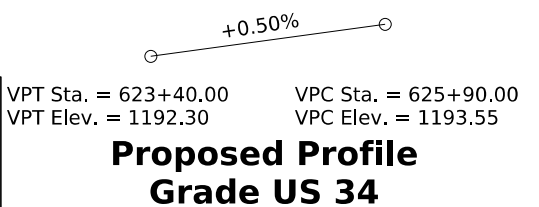
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 3 of 23FHWA No. 013331



- 1 Class E Revetment - 2' Thickness, 3.5:1 Max, slope normal to abutment.
- 2 Class E Revetment - 2' Thickness, 2.5:1 Max, slope normal to abutment
- 3 Operational Low Beam, Elev. 1191.05
- 4 Channel Low Beam, Elev. 1191.22
- 5 110'-0" x 44'-0" CCS Bridge, Sta. 624+60.00

Section A-A (Longitudinal Section Along CL Prop. US 34)



Hydraulic Data

RIDB: Not Applicable
Drainage Area = 6.13 Sq. Mi.
Stream Slope (HGL) = 11.56 ft./Mi.
Avg. Low Water Stage = 1185.07

$Q_{25} = 3,286$ cfs
Stage = 1188.97

$Q_{50} = 4,164$ cfs
Stage = 1189.65
Channel Low Beam = 1191.22
Avg. Bridge Velocity = 4.54 fps

$Q_{100} = 5,117$ cfs
Stage = 1190.35
Operational Low Beam = 1191.05
Backwater = (+)0.42 ft.
Avg. Bridge Velocity = 5.63 fps

$Q_{200} = 6,152$ cfs
Stage = 1191.02
Calculated Design Scour = 1170.42

Q Overtop = 6,665 cfs
Avg. Bridge Velocity = 6.79 fps
Calculated Check Scour = 1169.36

$Q_{500} = 7,400$ cfs

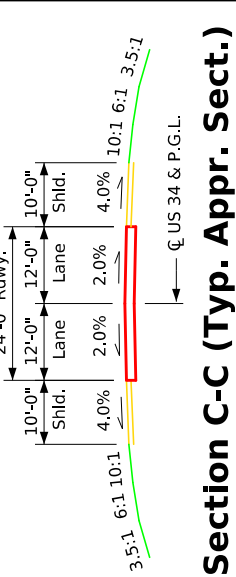
Roadway Overtop 1192.23
Sta. 623+10.73

Site is located within
Adams County F.I.S., Dated 4/5/2017.
No datum or base flood.

The bridge does not meet Iowa DOT's desired (operational or channel) freeboard per BDM 3.2.2.4.

- The proposed bridge provides reduced velocities through the bridge to reduce scour concerns.
- Lower water surface elevations reduce over topping and increase freeboard at the design flood event to the extent feasible.
- Proposed roadway profile matches existing to maintain overtopping point off bridge and prevent impact to flood plain.

- Plan Notes:
1. Top of bridge deck at centerline roadway is 0.03" below the profile grade to account for parabolic crown.
 2. Class E Revetment Stone is embedded.



Section C-C (Typ. Appr. Sect.)

Location
US 34 over Metz Creek
T-71N R-32W
Section 3
Grant Township
Adams County
Bridge Maint.
No. 0273.85034
FHWA No. 013331
Latitude 40.978970°
Longitude -94.513196°

Hydraulic Design



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: *Jaclyn Gutman* Date: 11/08/2024
Printed or Typed Name: Jaclyn Gutman

My license renewal date is December 31, 2025

Pages or sheets covered by this seal: Sheets V.4 thru V.6

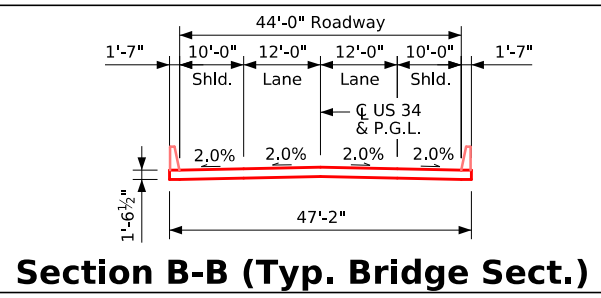
Situation Plan

US 34 Traffic Est.

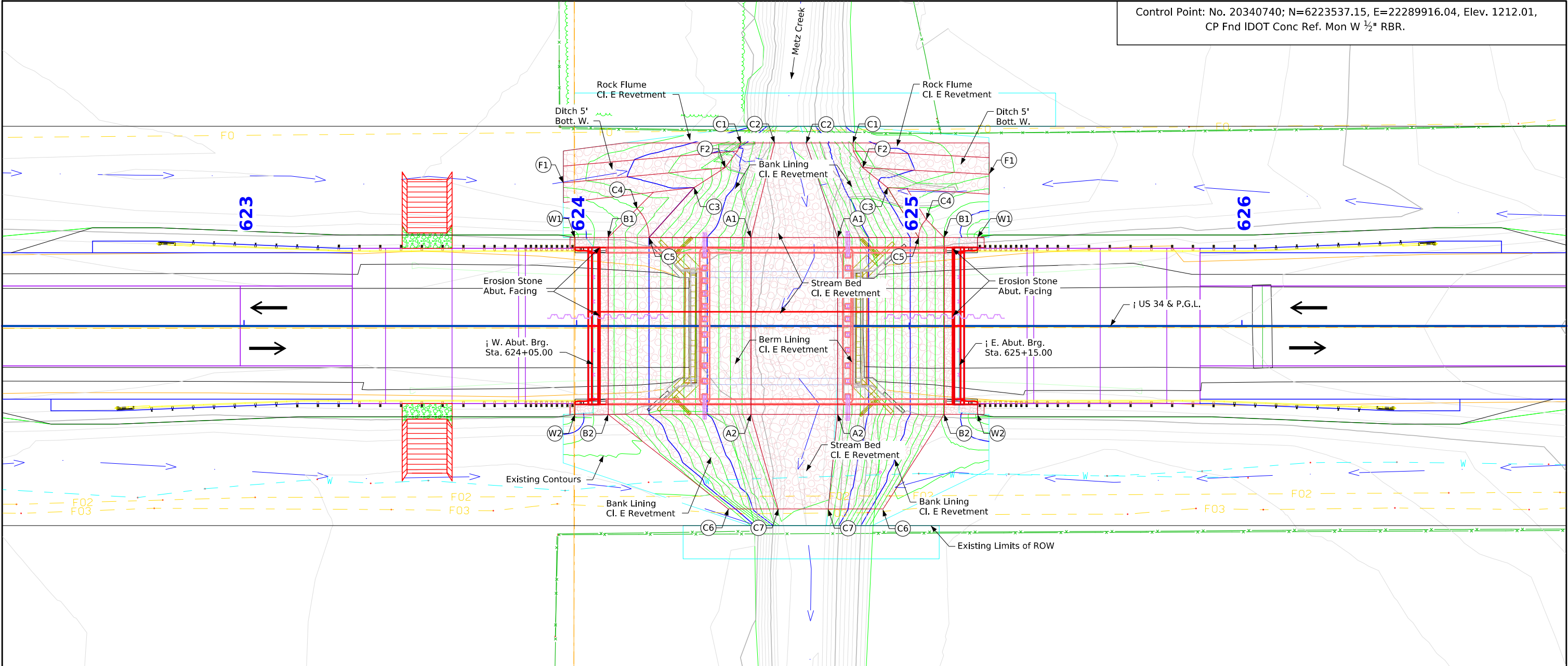
2027 AADT	2,594	V.P.D.
2047 AADT	3,040	V.P.D.
2047 DHV	314	V.P.H.
Trucks	21	%
Total		
Design ESALs	1,775,200	

Utilities Legend

-F0- AREON, Quality D
-F02- Windstream, Quality D
-F03- ICN, Quality D
-W- SIRWA, Quality D
Utilities shown on this sheet are for information only, see Road Design sheets for final utility information.



Design For 0° Skew
110'-0" x 44'-0" Continuous Concrete Slab Bridge
33'-6" End Spans 43'-0" Interior Span
Situation Plan
STA. 624+60.00 (US 34) Turn-in Date: August 2026
Adams County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 127 Design Sheet No. 4 of 23 FHWA No. 013331



Site Plan

See Design Sheet V.6 for Revetment Layout Details

Berm Slope Location Table						
Points	West Abutment			East Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	624+52.41	26.58' Lt.	1176.31	624+78.48	26.58' Lt.	1176.31
A2	624+52.41	26.58' Rt.	1176.31	624+78.48	26.58' Rt.	1176.31
B1	624+09.50	26.58' Lt.	1188.51	625+10.50	26.58' Lt.	1189.06
B2	624+09.50	26.58' Rt.	1188.51	625+10.50	26.58' Rt.	1189.06
W1	623+99.50	26.58' Lt.	1192.01	625+20.50	26.58' Lt.	1192.61
W2	623+99.50	26.58' Rt.	1192.01	625+20.50	26.58' Rt.	1192.61

Berm Slope Elevations Reflect The Grading Surface

Notes:
GCL - Grading Control Line

West Bank Grading Control:

- (C1) 624+51.99, 55.00' Lt., Top/Bank, GCL, Elev. 1185.00
- (C2) 624+60.74, 55.00' Lt., Toe/Bank, GCL, Elev. 1176.25
- (C3) 624+35.34, 41.58' Lt., Top/Bank, GCL, Elev. 1185.00
- (C4) 624+18.19, 35.27' Lt., Bench, GCL, Elev. 1185.00
- (C5) 624+21.79, 26.58' Lt., Top/Bank/Berm, GCL, Elev. 1185.00
- (C6) 624+46.96, 55.00' Rt., Top/Bank, GCL, Elev. 1186.00
- (C7) 624+60.96, 55.00' Rt., Toe/Bank, GCL, Elev. 1176.25
- (F1) 623+96.02, 43.00' Lt., Bott./Edge Ditch/Flume, Elev. 1186.54
- (F2) 624+44.62, 47.58' Lt., Top/Bank/Flume, Elev. 1183.00

N.W. Ditch/Flume Grading Control:

East Bank Grading Control:

- (C1) 624+81.97, 55.00' Lt., Top/Bank, GCL, Elev. 1186.00
- (C2) 624+67.34, 55.00' Lt., Toe/Bank, GCL, Elev. 1176.25
- (C3) 624+93.48, 41.58' Lt., Top/Bank, GCL, Elev. 1186.00
- (C4) 625+05.09, 31.99' Lt., Bench, GCL, Elev. 1186.00
- (C5) 625+02.86, 26.58' Lt., Top/Bank/Berm, GCL, Elev. 1186.00
- (C6) 624+91.89, 55.00' Rt., Top/Bank, GCL, Elev. 1187.00
- (C7) 624+75.64, 55.00' Rt., Toe/Bank, GCL, Elev. 1176.25
- (F1) 625+24.00, 44.76' Lt., Bott./Edge Ditch/Flume, Elev. 1186.87
- (F2) 624+85.99, 47.58' Lt., Top/Bank/Flume, Elev. 1184.00

N.E. Ditch/Flume Grading Control:



Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

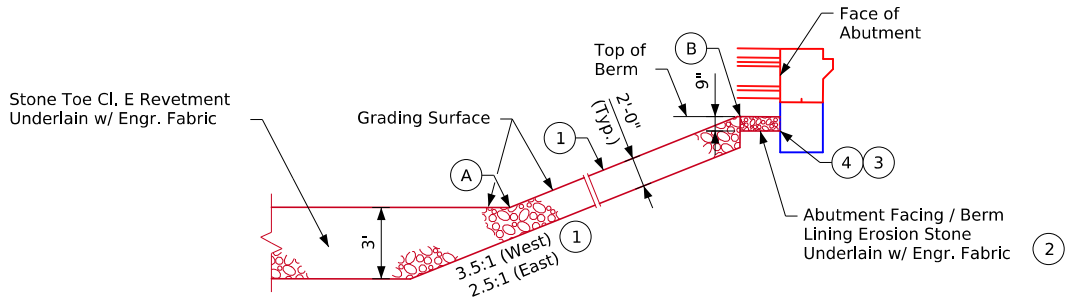
Situation Plan - Site

STA. 624+60.00 (US 34)Turn-In Date: August 2026

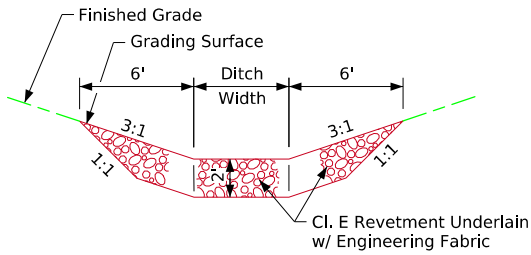
Adams County

IOWA DEPARTMENT OF TRANSPORTATION

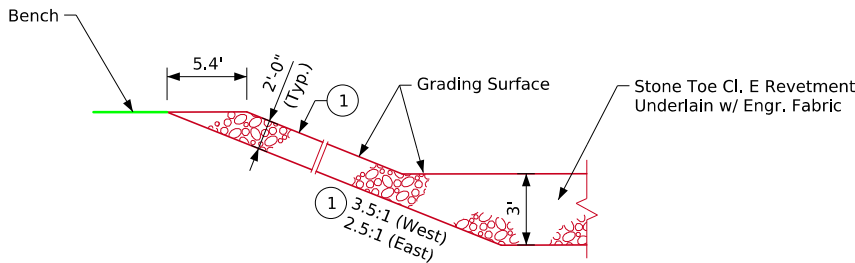
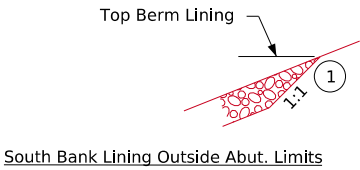
Design No. 127Design Sheet No. 5 of 23FHWA No. 013331



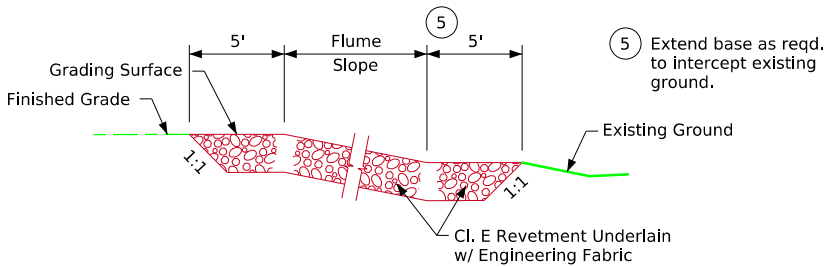
Section Through Embedded Berm Lining and Stream Bed



Section Through Rock Flume



Section Through Embedded North Bench/Bank Lining and Stream Bed



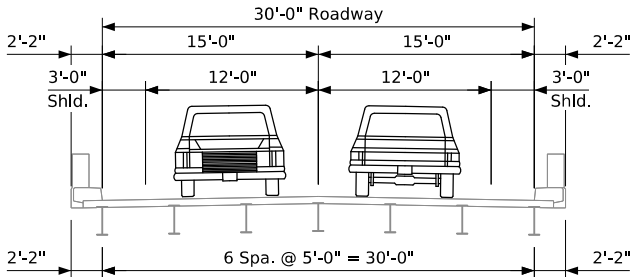
Section Along Rock Flume

Estimated Berm Armoring Quantities				
Revetment Type - Location	Revetment Cl. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	Excavation Class 10, Channel (CY)
Berm Lining - West	281.2	9.9	285.9	181.9
Bank Lining - West	94.0	-	86.7	58.7
Flume Lining, N.W.	72.7	-	94.0	45.4
Berm Lining - East	217.3	9.9	221.6	142.0
Bank Lining - East	82.3	-	74.4	51.4
Flume Lining, N.E.	54.7	-	71.0	34.2
Stream Bed	440.3	-	278.6	275.2
Totals	1,242.5	19.8	1,112.2	788.8

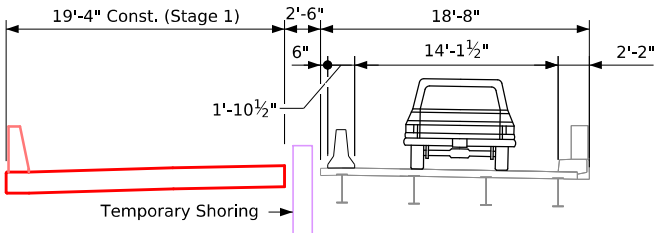
Excavation quantity calculated from grading surface.

- ① Slope normal to ∇ Abut. / Grading Control Line.
- ② Extend facing out to lateral limits of wing armoring.
- ③ Carry engineering fabric up to face of abutment.
- ④ Slope normal to bank grading control line (GCL).
- A Toe of berm slope
- B Top of berm slope

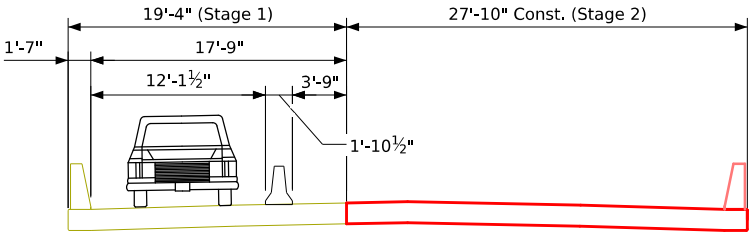
Design For 0° Skew
110'-0" x 44'-0" Continuous Concrete Slab Bridge
 33'-6" End Spans 43'-0" Interior Span
Situation Plan - Misc.
 STA. 624+60.00 (US 34) Turn-In Date: August 2026
Adams County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 127 Design Sheet No. 6 of 23 FHWA No. 013331



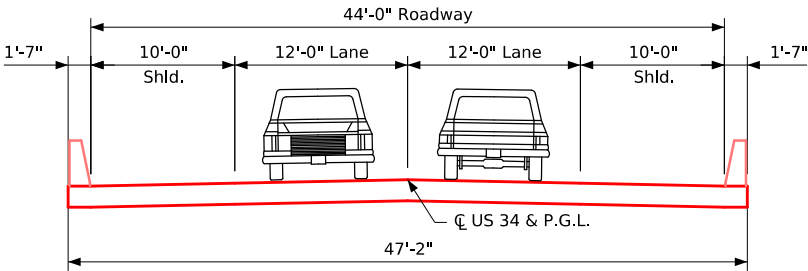
Existing Bridge Cross Section
(Looking East)



Stage 1 Cross Section
(Looking East)



Stage 2 Cross Section
(Looking East)



Final Cross Section
(Looking East)

Stage Construction Notes:

Work is to be completed in stages with one lane traffic maintained at all times.

Temporary shoring will be required to support earth below traffic lanes. See general notes for temporary shoring requirements.

Refer to roadway sheets for details pertaining to traffic control, approach pavement and guardrail.

Stage 1

1. Set up traffic control for stage 1 construction and place traffic on eastbound lane.
2. Remove approach pavement for stage 1 construction and install stage 1 embankment shoring.
3. Complete stage 1 removals and construct stage 1 berm.
4. Construct stage 1 of new bridge.
5. Install stage 2 embankment shoring and backfill stage 1 abutments.
6. Place stage 1 permanent approach pavement.
7. Install stage 1 shoulders and guardrail.

Stage 2

1. Set up traffic control for stage 2 construction and place traffic on new westbound lane and detour shoulder.
2. Remove stage 1 embankment shoring.
3. Complete stage 2 approach and bridge removals and construct stage 2 berm.
4. Construct stage 2 of new bridge.
5. Backfill stage 2 abutments and remove embankment shoring.
6. Place stage 2 permanent approach pavement.
7. Install stage 2 shoulders and guardrail.

Completion

1. Open U.S. 34 to normal traffic.

Removal Notes:

Removals are to be completed in stages to the limits noted and shown. It is the intent of this design to minimize stage 1 removals in effort to preserve the integrity of the existing structure under the stage 1 traffic loads.

During stage 1 construction, the existing bridge abutments shall be preserved to the maximum extent practical to complete the work as specified.

After stage 1 construction is completed, all remaining portions of the existing bridge shall be removed in accordance with section 2401 of the Standard Specifications.

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans 43'-0" Interior Span

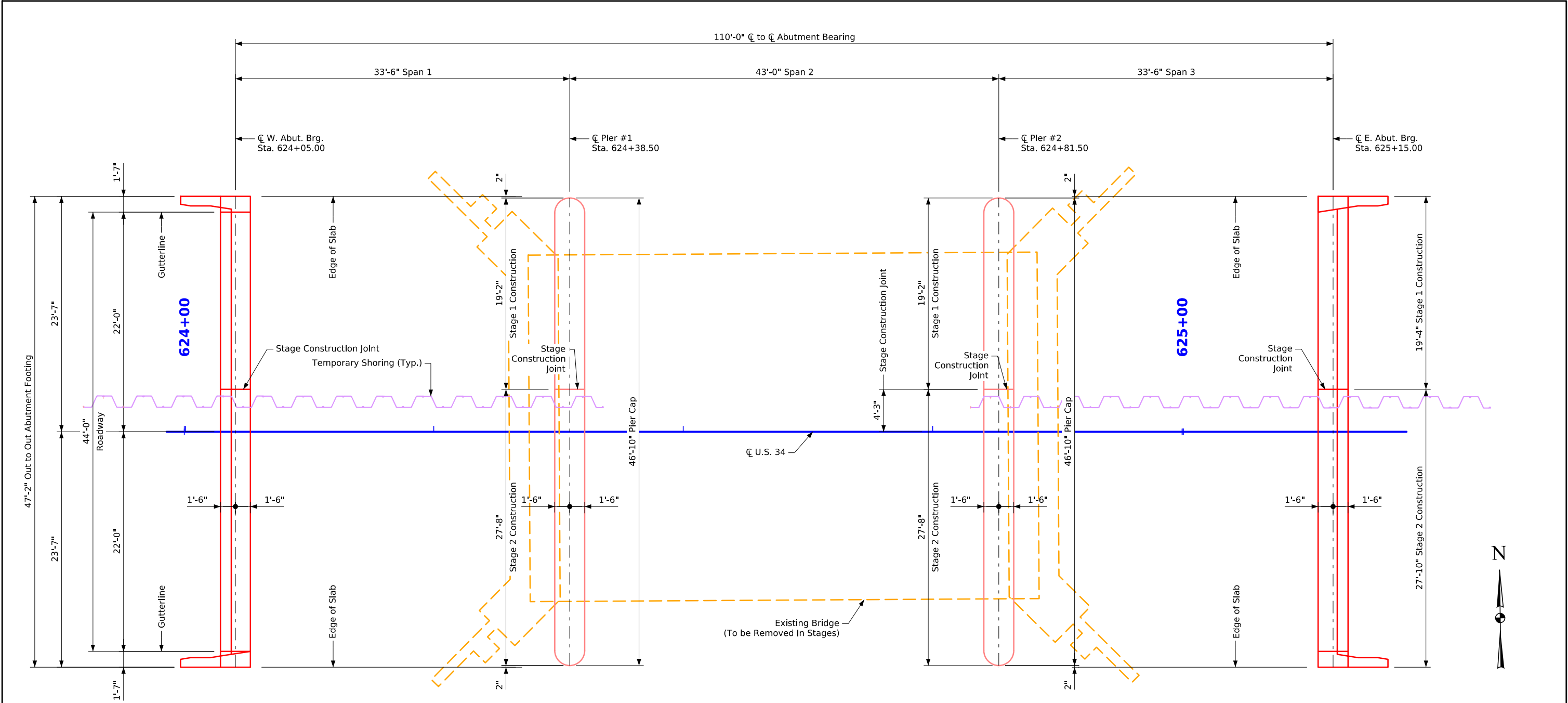
Staging Plan

STA. 624+60.00 (US 34) Turn-in Date: August 2026

Adams County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127 Design Sheet No. 7 of 23 FHWA No. 013331



Staking Diagram

Note: Existing abutment footings are to be completely removed and piles are to be cut off.

Bridge Coordinates				
Point Location	Northing	Easting	Chord Line Station	Chord Line Offset
☐ West Abut, Left Slab Edge	6223640.288	22289229.529	624+05.00	-23.583
☐ West Abut, CL	6223616.708	22289229.174	624+05.00	0
☐ West Abut, Right Slab Edge	6223593.127	22289228.819	624+05.00	23.583
☐ Pier 1, Left Slab Edge	6223639.784	22289263.026	624+38.50	-23.583
☐ Pier 1, CL	6223616.203	22289262.670	624+38.50	0
☐ Pier 1, Right Slab Edge	6223592.622	22289262.315	624+38.50	23.583
☐ Pier 2, Left Slab Edge	6223639.136	22289306.021	624+81.50	-23.583
☐ Pier 2, CL	6223615.555	22289305.665	624+81.50	0
☐ Pier 2, Right Slab Edge	6223591.975	22289305.310	624+81.50	23.583
☐ East Abut, Left Slab Edge	6223638.632	22289339.517	625+15.00	-23.583
☐ East Abut, CL	6223615.051	22289339.162	625+15.00	0
☐ East Abut, Right Slab Edge	6223591.470	22289338.806	625+15.00	23.583

Note: An electronic file containing the bridge coordinate data is available as part of the e-files supplied with the contract documents. The contractor shall verify these coordinates with the project horizontal control information provided in the road plans.

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

Staking Diagram

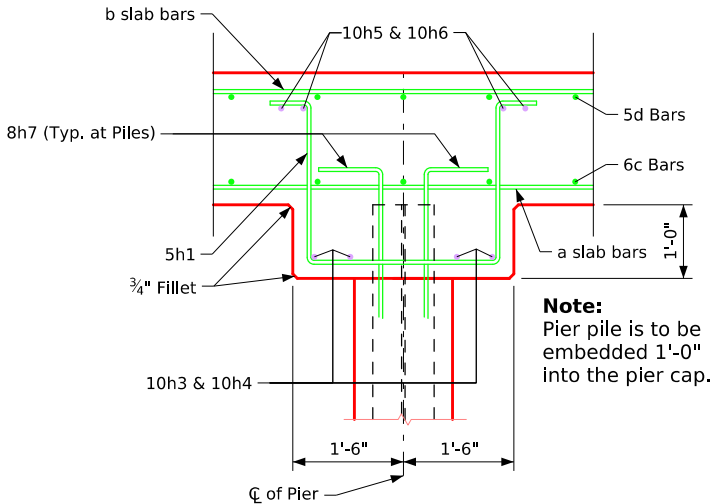
STA. 624+60.00 (US 34)Turn-In Date: August 2026

Adams County

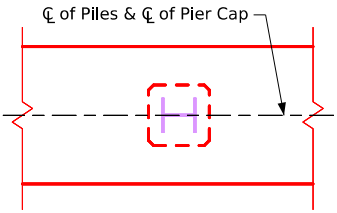
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 8 of 23FHWA No. 013331

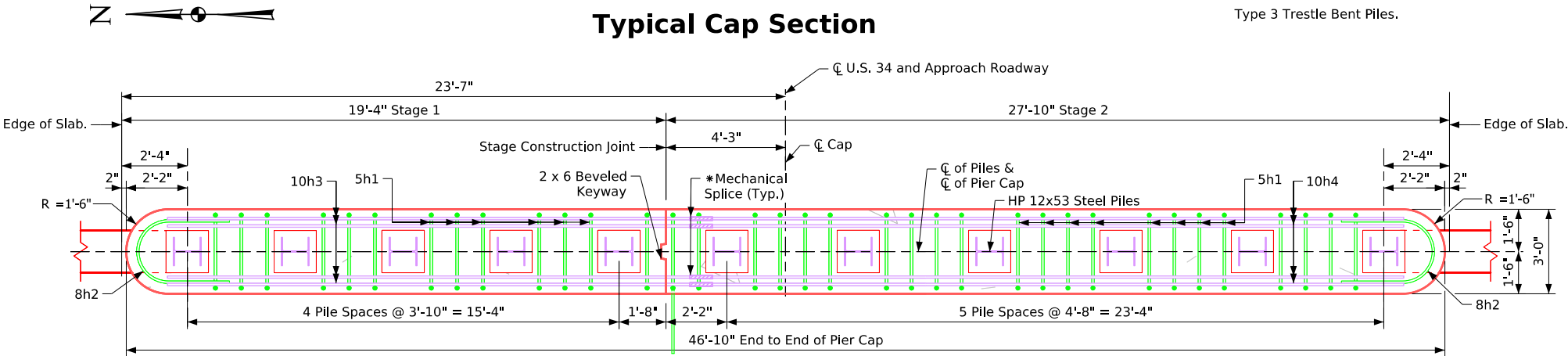
Bottom of Cap Elevations		
Point	Pier 1	Pier 2
Elev. "A"	1189.83	1190.04
Elev. "B"	1190.17	1190.38
Elev. "C"	1190.22	1190.44
Elev. "D"	1189.83	1190.04



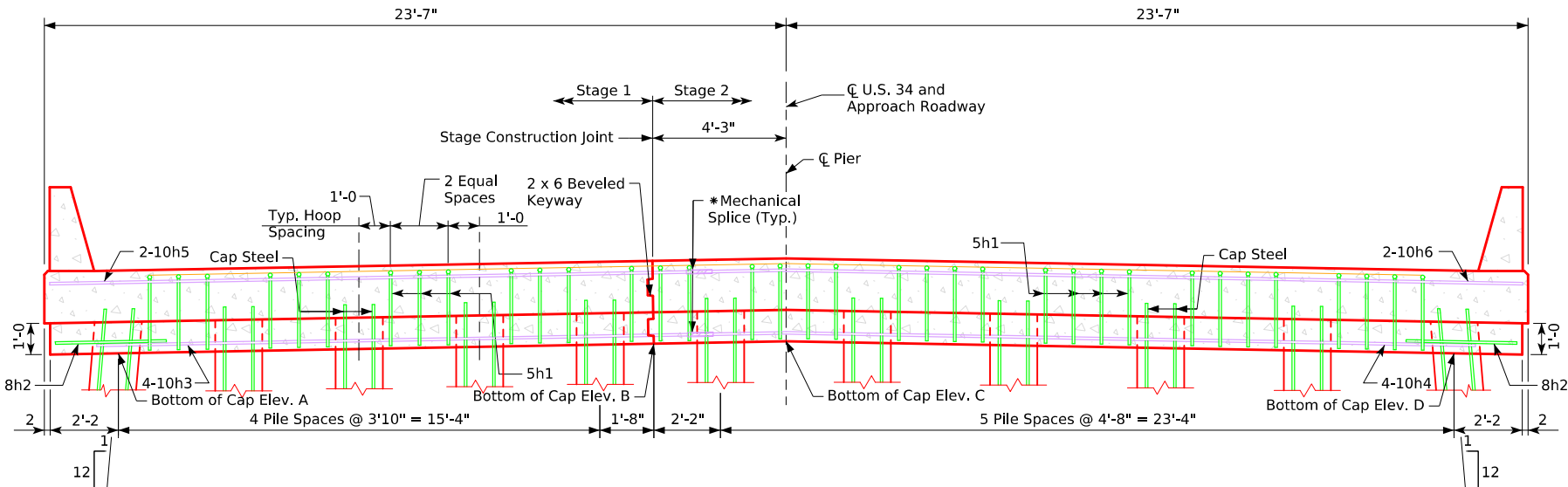
Note:
Monolithic pier cap reinforcing and concrete is shown with the superstructure quantities on Design Sheet No. 15.



Pile Orientation
Type 3 Trestle Bent Piles.



Section Below Slab
11 - HP 12 X 53 Steel Bearing Piles Required at Each Pier



Section Near Pier
Showing Stirrup Spacing and Number of Piling
(Facing East)

*See Mechanical Splice Assembly Notes & Detail on Design Sheet 3.

Pier Notes:

The minimum clear distance from the face of the concrete to the nearest reinforcing bar is to be 2" unless otherwise noted or shown.
Pier piles are to be driven to full penetration, if practicable, but in no case to a bearing value less than the pile bearing required for each bridge length as shown in plans. Additional driving capacity may be required through scourable layers. For General Plan Notes for additional information, see Design Sheet No. 3.
Cap steel, as detailed on the P10L Standard Pile Drawing, is required for monolithic pier caps.
Concrete quantities are based on the use of Type 3 piling.
All reinforcing steel is to be Grade 60.
Pier piling was designed for HL-93 loading with an allowance for 20 lbs. per sq. ft. of future wearing surface.
The pier pile encasements are to be as detailed and noted on Design Sheet No. 10. The unit price bid for encasement shall be full payment for furnishing and placing all material and necessary excavation. The piling encasements are to extend from the bottom of pier cap to elevation shown on the situation plan.
The Contractor shall monitor the existing piers for signs of settlement during pile driving for new piers. The Contractor shall visually inspect and survey the elevation of the existing piers once a day during pile driving. Elevations and findings of the visual inspection shall be submitted to the Engineer for review. All costs associated with monitoring the existing piers shall be included in the lump sum bid item "Construction Survey, Location Survey".

Pier 1 Design and Driving Notes:

The contract length of 75 feet for the Pier No. 1 piles is based on a mixed soil classification, a total factored axial load per pile (Pu) of 124 kips, and a geotechnical resistance factor (Phi) of 0.65 for soil and 0.7 for rock end bearing.

The nominal axial bearing resistance for construction control was determined from a mixed soil classification and a geotechnical resistance factor (Phi) of 0.65. Piles are assumed to be driven from a start elevation at the top of the cap embedment. Design scour (200-year) was assumed to affect the upper 19 feet of embedded pile length and cause 9 kips of driving resistance.

The required nominal axial bearing resistance for the Pier No. 1 piles is 100 tons at the end of drive or retap. The pile contract length shall be driven as per plan unless piles reach refusal. Construction control requires a WEAP analysis with bearing graph.

Pier 2 Design and Driving Notes:

The contract length of 80 feet for the Pier No. 2 piles is based on a mixed soil classification, a total factored axial load per pile (Pu) of 124 kips, and a geotechnical resistance factor (Phi) of 0.65 for soil and 0.7 for rock end bearing.

The nominal axial bearing resistance for construction control was determined from a mixed soil classification and a geotechnical resistance factor (Phi) of 0.65. Piles are assumed to be driven from a start elevation at the top of the cap embedment. Design scour (200-year) was assumed to affect the upper 19 feet of embedded pile length and cause 9 kips of driving resistance.

The required nominal axial bearing resistance for the Pier No. 2 piles is 100 tons at the end of drive or retap. The pile contract length shall be driven as per plan unless piles reach refusal. Construction control requires a WEAP analysis with bearing graph.

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

Monolithic Pier Cap Details

STA. 624+60.00 (US 34)Turn-In Date: August 2026

Adams County

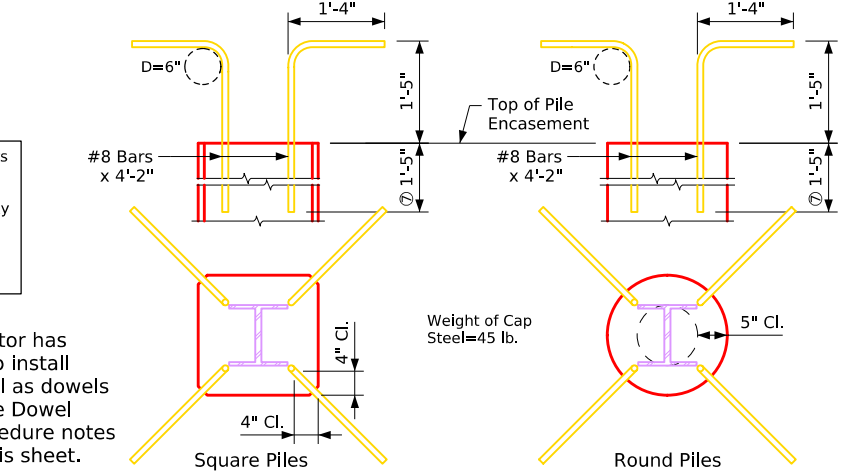
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 9 of 23FHWA No. 013331

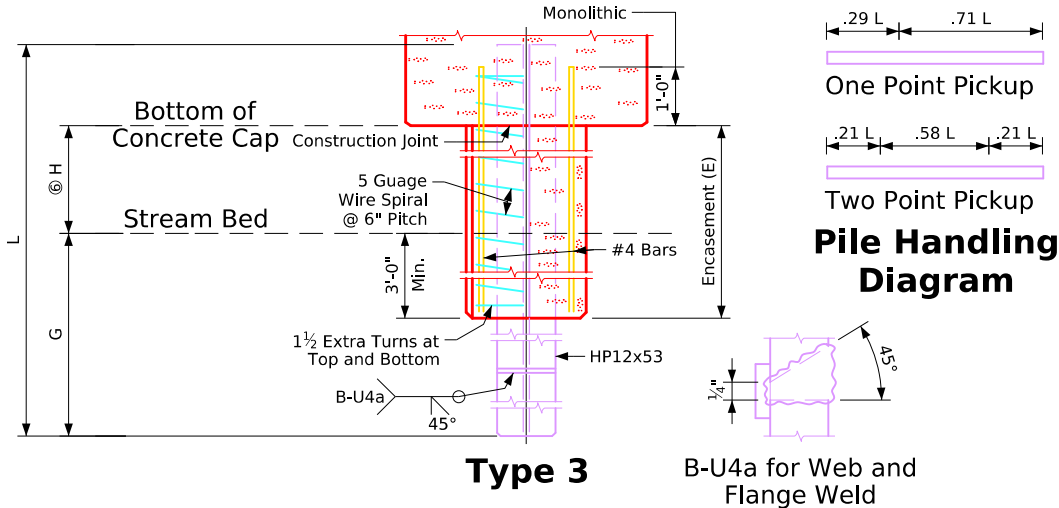
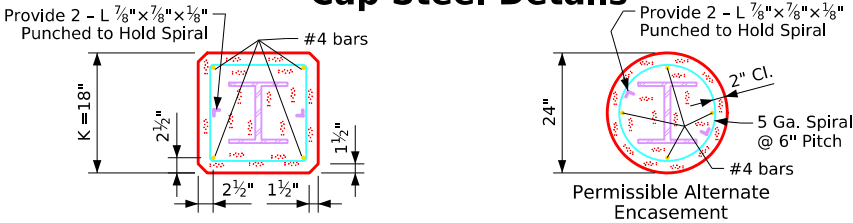
Concrete Encased Steel H Pile

Note: The #8 bars shall be epoxy coated when the deck steel is epoxy coated and are included in the superstructure quantities.

⑦ The Contractor has the option to install the cap steel as dowels following the Dowel Setting Procedure notes shown on this sheet.



Cap Steel Details



⑥ The maximum H may be measured to the streambed elevation, however; H shall be measured to the scour elevation when this elevation is deeper than the streambed elevation.

Steel H Pile		HP12x53
G Min. Below Ground		ft 21
⑥ H Max. Above Ground W/ Monolithic		ft 23
⑥ H Max. Above Ground W/ Non-Monolithic		ft 20
Square	Concrete (E=18')	cy 1.41
	Concrete 1' Change	cy 0.078
	④ Reinforcing (E=18')	lb 99
	④ Reinforcing 1' Change	lb 5.13
Round	Concrete (E=18')	cy 2.02
	Concrete 1' Change	cy 0.112
	④ Reinforcing (E=18')	lb 102
	④ Reinforcing 1' Change	lb 5.26
⑤ Nominal Resistance Pn		kips 192
f'c = 4.0 ksi		

④ Includes Weight of Punched L 7/8"x7/8"x1/8"
⑤ See Bridge Design Manual 6.6.4.2 for Additional Information

General Notes:

Except as noted elsewhere, material, construction, driving and extensions or build ups when necessary shall be in accordance with Standard Specifications of the Iowa D.O.T. and current Supplemental Specifications and Special Provisions applicable.
Cap steel shall be as detailed on this sheet (D=Pin Diameter). It shall be used if pile embedment is less than 1'-6".
Cost of all driving points and cap steel is to be included in the price bid per linear foot for piling.
Wire spiral shall conform to ASTM A1064 Grade 70.

Bidding Notes:

The plans shall designate the size of pile to be used. They shall also specify Type 3. The Contractor may choose the shape of the encasement.
Piles shall be bid designating the size, type and length.
Type 3 piling will be bid per linear foot of pile and linear foot of encasement. Price bid for encasement shall be full payment for necessary excavation and for furnishing and placing all material.

Dowel Setting Procedure:

If cap steel is required for the prestressed piles, the #8 deformed bars are to be set as dowels into the piles with polymer grout in accordance with Article 2301.03, E, of the Standard Specifications or by the following procedure.
A - Drill hole approximately twice the diameter of the dowel bar and to the depth indicated.
B - Fill hole with water and allow to stand long enough to thoroughly saturate the surrounding concrete (about four hours).
C - Blow out all free water and fill hole 2/3 full of mortar.
D - Insert dowel by driving, if necessary, and manipulate or tap with a hammer to consolidate mortar and secure complete embedment.
E - Add more mortar, if necessary, to fill hole.
F - Mortar shall consist of equal parts portland cement and sand with just enough water to make a workable mix.

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

Pier Encasement Details

STA. 624+60.00 (US 34)Turn-In Date: August 2026

Adams County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 10 of 23FHWA No. 013331

Abutment Notes:

All piling are HP 10x42.
The concrete and reinforcing steel for the wings is included with the superstructure.
Details on this sheet are to be used only when abutments are placed on steel piles. If rock is encountered closer than 12'-0" below the abutment footing, special analysis may be required.
The minimum clear distance from the face of the concrete to the nearest reinforcing bar is to be 2 inches unless otherwise noted or shown.
Steel abutment piles shall be driven to full penetration if practicable, but in no case to a bearing value less than shown in the design plans.
All reinforcing steel is to be Grade 60.
Abutment piling was designed for HL-93 loading with an allowance for 20 lbs. per sq. ft. future wearing surface.

Notes:

Barrier rails and reinforcement not shown.
Wing reinforcing not shown.
5n1 wing reinforcement shall be placed in the abutment footing before the footing is poured. For additional details, see Design Sheet No. 12.
6e3, 6e4, and 8e are included in the **Superstructure Quantities**.

East Abutment Design and Driving Notes:

The contract length of 80 feet for the East Abutment piles is based on a mixed soil classification, a total factored axial load per pile (Pu) of 93 kips, and a geotechnical resistance factor (Phi) of 0.65 for soil and 0.7 for rock end bearing.
The nominal axial bearing resistance for construction control was determined from a mixed soil classification and a geotechnical resistance factor (Phi) of 0.65. Piles are assumed to be driven from a start elevation at the bottom of footing. Design scour (200-year) was assumed to affect the upper 17 feet of embedded pile length and cause 17 kips of driving resistance.
The required nominal axial bearing resistance for East Abutment piles is 81 tons at the end of drive or retap. The pile contract length shall be driven as per plan unless piles reach refusal. Construction control requires a WEAP analysis with bearing graph.

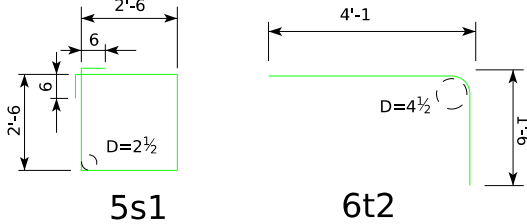
West Abutment Design and Driving Notes:

The contract length of 70 feet for the West Abutment piles is based on a mixed soil classification, a total factored axial load per pile (Pu) of 93 kips, and a geotechnical resistance factor (Phi) of 0.65 for soil and 0.7 for rock end bearing.
The nominal axial bearing resistance for construction control was determined from a mixed soil classification and a geotechnical resistance factor (Phi) of 0.65. Piles are assumed to be driven from a start elevation at the bottom of footing. Design scour (200-year) was assumed to affect the upper 16 feet of embedded pile length and cause 17 kips of driving resistance.
The required nominal axial bearing resistance for West Abutment piles is 81 tons at the end of drive or retap. The pile contract length shall be driven as per plan unless piles reach refusal. Construction control requires a WEAP analysis with bearing graph.

BILL OF REINFORCING STEEL - TWO ABUTMENTS

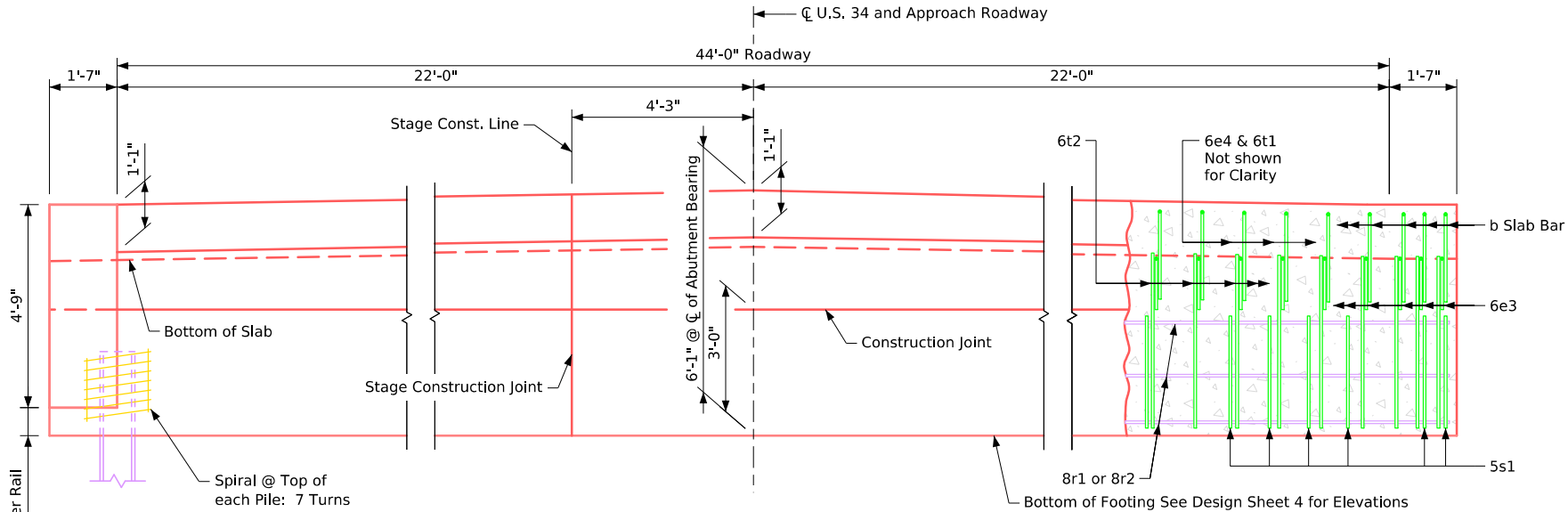
Mark	Location	Shape	Length	No.	Weight
Stage 1					
5s1	Abutment Footing Hoops		11'-0"	38	436
6t1	Footing to Slab Bars		5'-0"	42	315
6t2	Footing to Slab Bars		5'-7"	42	352
2z1	Pile Spiral		38'-6"	6	39
2z2	Pile Spacers		1'-10"	18	23
Abutments (Stage 1) Epoxy Coated Reinforcing - Total (lbs.)					1,165
8r1	Abutment Footing Longitudinal		20'-5"	14	763
Abutments (Stage 1) Stainless Steel Reinforcing - Total (lbs.)					763
Stage 2					
5s1	Abutment Footing Hoops		11'-0"	54	620
6t1	Footing to Slab Bars		5'-0"	58	436
6t2	Footing To Slab Bars		5'-7"	58	486
2z1	Pile Spiral		38'-6"	8	51
2z2	Pile Spacers		1'-10"	24	31
Abutments (Stage 2) Epoxy Coated Reinforcing - Total (lbs.)					1,624
8r2	Abutment Footing Longitudinal		26'-5"	14	987
Abutments (Stage 2) Stainless Steel Reinforcing - Total (lbs.)					987

BENT BAR DETAILS

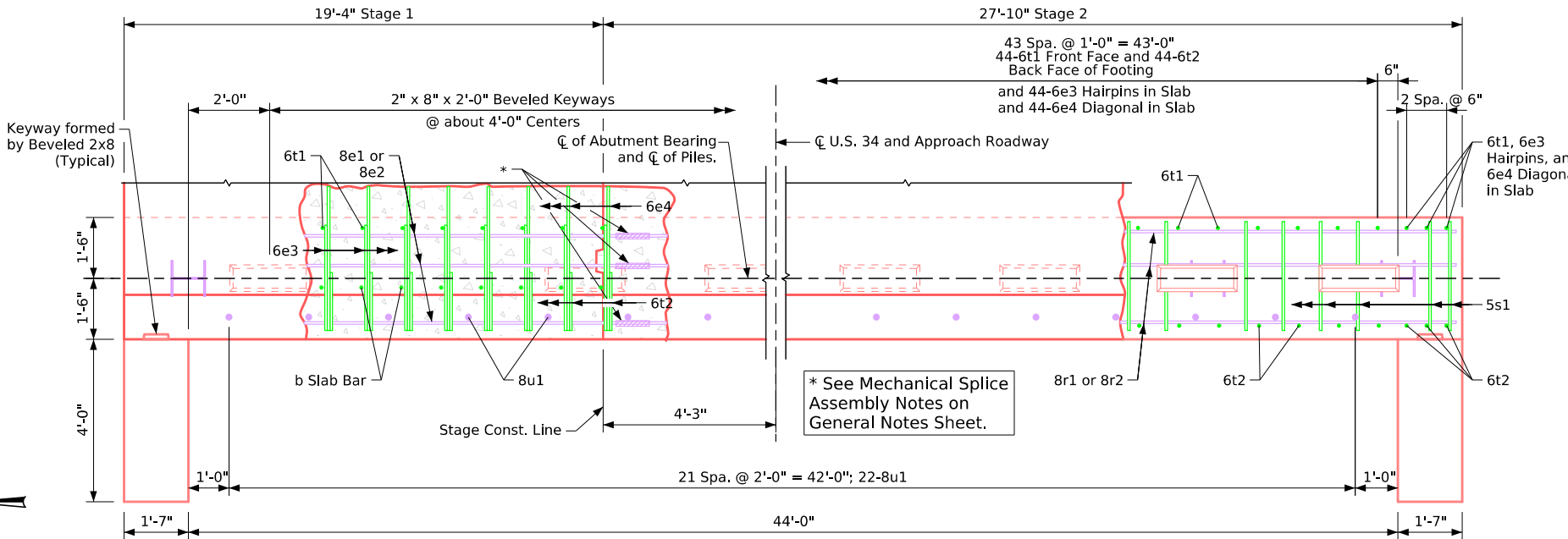


Note: Dimensions are out-to-out. D = pin diameter.

Note: The pile spirals and spiral spacers are to be non-coated reinforcing but may be epoxy coated at the Contractors option and expense.

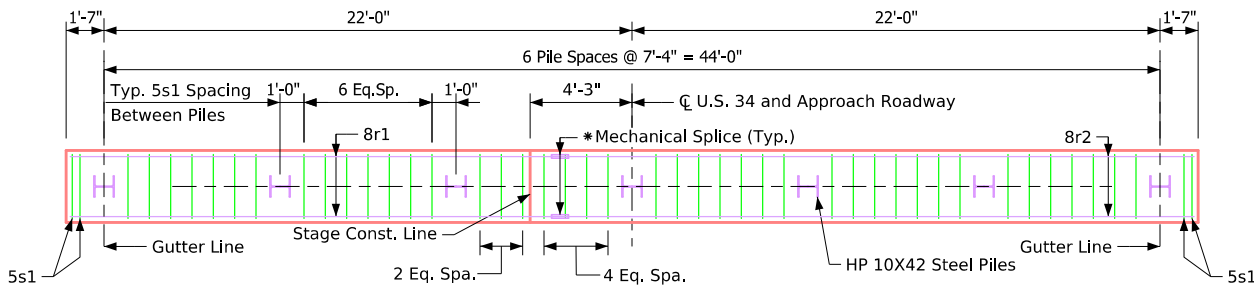


Rear Elevation



Plan View

(West Abutment Shown, East Abutment Similar)



Abutment Pile Plan

(West Abutment Shown, East Abutment Similar)
7 - HP 10x42 Steel Bearing Piles at East Abutment
7 - HP 10x42 Steel Bearing Piles at West Abutment

ESTIMATED QUANTITIES - TWO STEEL ABUTS.

Location	Unit	
Structural Concrete (Bridge)	c.y.	31.4
Reinforcing Steel, Stainless Steel	lbs.	1,750
Reinforcing Steel, Epoxy-Coated	lbs.	2,789
Steel Piling HP 10x42	no.	14

Note: Concrete reinforcing steel and piling quantities are included on the summary quantities sheet.

Design For 0° Skew
110'-0" x 44'-0" Continuous Concrete Slab Bridge
33'-6" End Spans 43'-0" Interior Span
Abutment Quantities and Details
STA. 624+60.00 (US 34) Turn-In Date: August 2026

Adams County

IOWA DEPARTMENT OF TRANSPORTATION
Design No. 127 Design Sheet No. 11 of 23 FHWA No. 013331



▲ Note: Refer to **Barrier Rail End Section Details** on Design Sheet No. 18 & 19 for details of the barrier rail end section, Reinforcing 6c2, 5c4, and 4t3 are included in the **Barrier Rail End Section Details** on Design Sheet No. 20.

Note: 5m1 and 5n1 are included in the **Superstructure Quantities** sheet.



This bridge is designed for HL-93 loading plus an allowance of 20 pounds per square foot of roadway for a future wearing surface.

The slab, as shown, includes a 3/4-inch integral wearing surface.

The minimum clear distance from the face of concrete to the nearest reinforcing bar shall be 2 inches unless otherwise noted or shown. All reinforcing steel is to be securely wired in place. See **Bar Chair Note**.

All reinforcing shall be Grade 60.

The concrete slab is to be placed with a minimum of construction joints. Procedures for placing slab concrete shall be submitted for approval, together with a statement of the proposed method and evidence that the contractor possesses the necessary equipment and facilities to accomplish the required result. Slab falsework shall be removed prior to the construction of the barrier rails unless slab construction is staged.

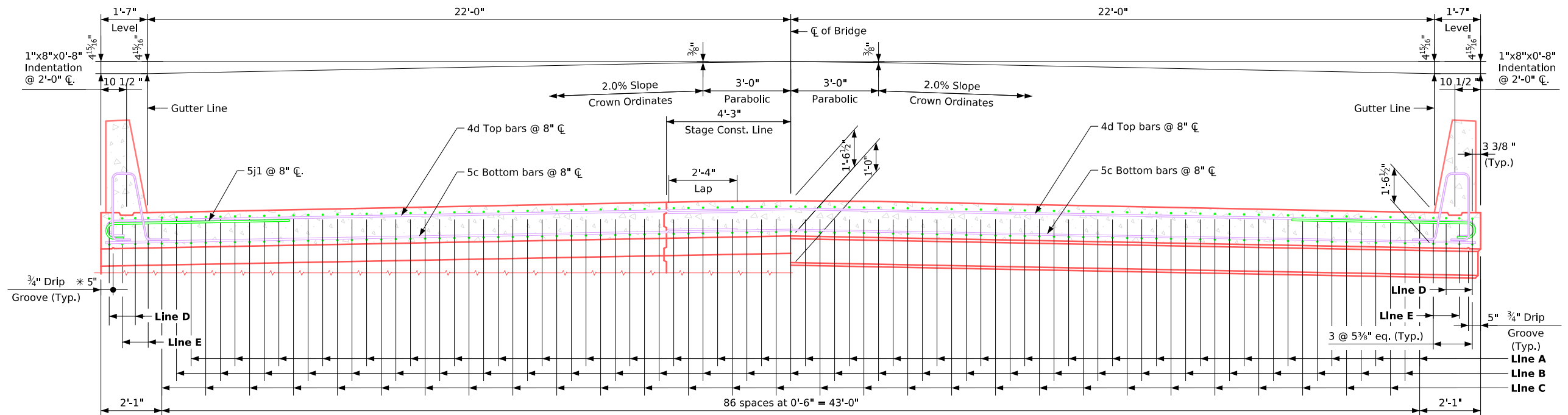
Note that when Portland cement approach pavement is placed, compressible joint material must be used between the pavement and the end of the bridge. If necessary to prevent damage to the end of the bridge deck or backwall from construction equipment, an appropriate method of protection approved by the engineer shall be provided by the bridge contractor at no extra cost to the state.

The cost of furnishing and placing a 3-inch diameter PVC pipe in each wing is included in the price bid for "Structural Concrete (Bridge)".

The top mat of reinforcing steel is to be supported by individual bar chairs spaced at no more than 3'-0" centers longitudinally and transversely. The bottom mat of reinforcing steel is to be supported by individual bar chairs spaced at no more than 3'-0" centers longitudinally and transversely, or by continuous rows of bar high chairs or slab bolsters spaced 4'-0" apart. **I.M. 451.01** requirements shall apply for bar chairs, bar high chairs, and slab bolsters.



2:34:37 PM	7/23/2026	jsouhrada	pw:\\projectwise.dot.int.lan:PWMain\\Documents\\Projects\\0203401022\\Bridge\\(039) Bridge Replacement-CCS\\SHT 02034010 KM 0127 013331 SUPERSTRUCTURE
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Half Section Near Abutment

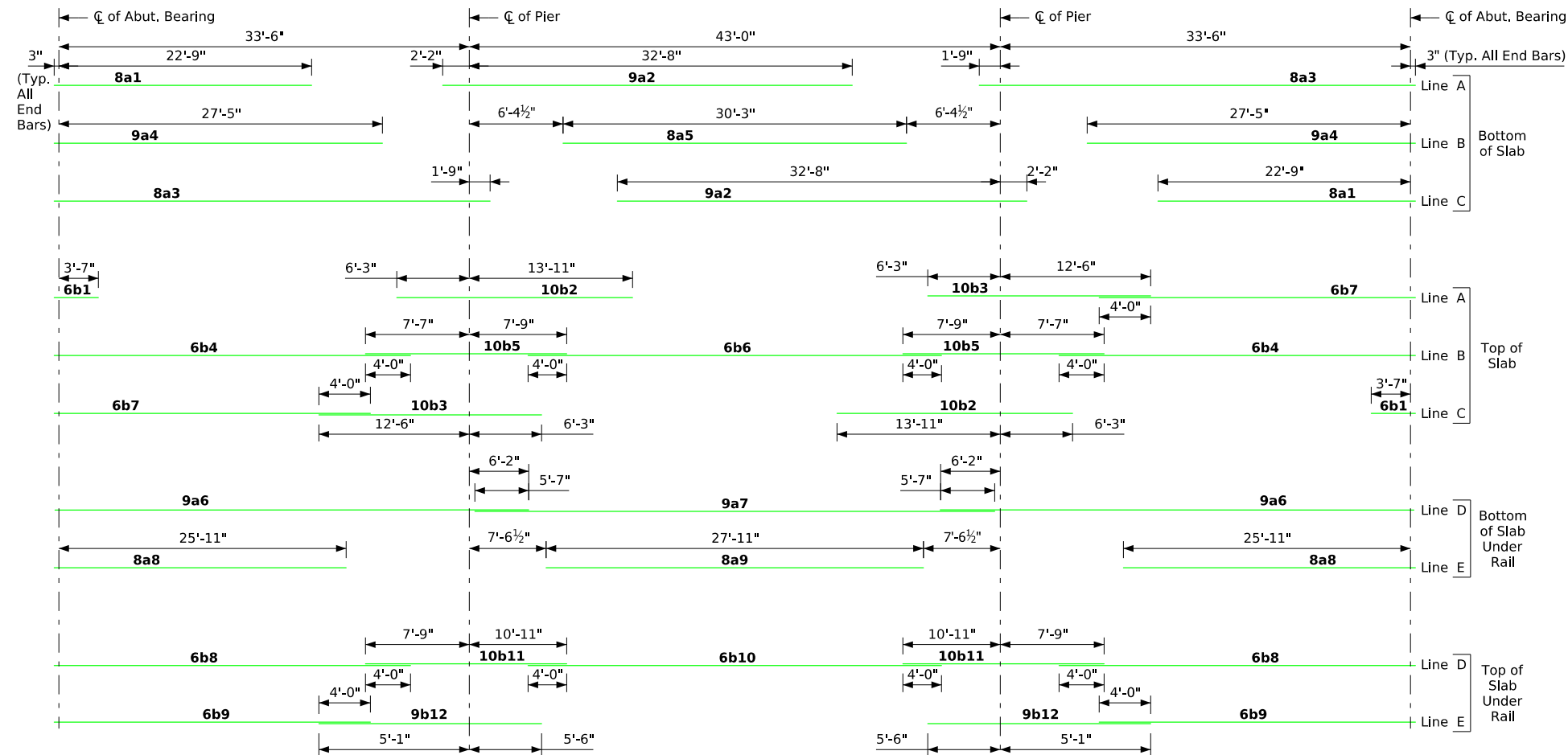
Half Section Near Pier

Bars on stage construction joint may be shifted up to 1 inch to clear the joint

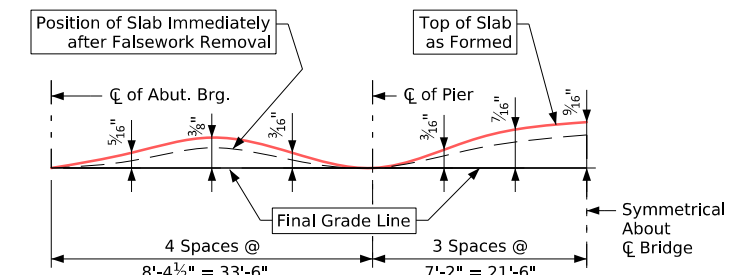
Note:
Top longitudinal reinforcing steel shall be parallel to and 2 3/4 inches clear below the top of the Slab
Bottom longitudinal reinforcing steel shall be parallel to and 1 1/2 inches clear above the bottom of the Slab
Reinforcing steel shall be securely wired in place and adequately supported on bar chairs before concrete placement.

Slab cross-section area = 72.76 sq. ft.

I.M. 451.01 requirements shall apply for bar chairs.



Placement for Longitudinal Reinforcement



Form Camber Diagram

This diagram illustrates the form camber required to compensate for the anticipated ultimate dead load deflection. The dimensions shown do not account for form deflection or falsework settlement.

Design For 0° Skew
110'-0" x 44'-0" Continuous Concrete Slab Bridge
33'-6" End Spans 43'-0" Interior Span
Transverse Section
STA. 624+60.00 (US 34) Turn-In Date: August 2026
Adams County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 127 Design Sheet No. 14 of 23 FHWA No. 013331

Epoxy Reinforcing Steel for Superstructure (Stage 1)					
Location	Shape	Bar	No.	Length	Weight
Slab Longitudinal Bottom		8a1	23	23'-0"	1,412
Slab Longitudinal Bottom		9a2	23	34'-10"	2,724
Slab Longitudinal Bottom		8a3	23	35'-6"	2,180
Slab Longitudinal Bottom		9a4	24	27'-8"	2,258
Slab Longitudinal Bottom		8a5	12	30'-3"	969
Slab Longitudinal Bottom, at Rail		9a6	4	39'-11"	543
Slab Longitudinal Bottom, at Rail		9a7	2	41'-10"	284
Slab Longitudinal Bottom, at Rail		8a8	4	26'-2"	279
Slab Longitudinal Bottom, at Rail		8a9	2	27'-11"	149
Slab Longitudinal Top		6b1	23	6'-1"	210
Slab Longitudinal Top		10b2	23	20'-2"	1,996
Slab Longitudinal Top		10b3	23	18'-9"	1,856
Slab Longitudinal Top		6b4	24	32'-5"	1,169
Slab Longitudinal Top		10b5	24	15'-4"	1,584
Slab Longitudinal Top		6b6	12	35'-6"	640
Slab Longitudinal Top		6b7	23	27'-6"	950
Slab Longitudinal Top, at Rail		6b8	4	32'-3"	194
Slab Longitudinal Top, at Rail		6b9	4	34'-11"	210
Slab Longitudinal Top, at Rail		6b10	2	29'-2"	88
Slab Longitudinal Top, at Rail		10b11	4	18'-8"	321
Slab Longitudinal Top, at Rail		9b12	4	10'-7"	144
Slab Hairpins at Abutment		6e3	42	5'-0"	315
Slab Diagonal at Abutment		6e4	42	5'-11"	373
Pier Cap Stirrup		5h1	26	7'-9"	210
Pier Cap Longitudinal Ends		8h2	2	14'-5"	77
Pier Cap Pile Ties		8h7	40	4'-2"	445
Top of Slab Transverse at Rail		5j1	159	7'-6"	1,244
Wing Vertical		5m1	20	4'-5"	92
Wing Horizontal Back Face		5n1	12	6'-8"	83
Epoxy Reinforced Total Weight (lbs)					22,999

Stainless Steel Reinforcing Steel for Superstructure (Stage 1)					
Location	Shape	Bar	No.	Length	Weight
Slab Transverse Bottom		5c1	160	21'-6"	3,588
Slab Transverse Top		4d1	160	22'-0"	2,351
Slab Tansverse at Abutment		8e1	18	20'-5"	981
Pier Cap Transverse		10h3	8	18'-11"	651
Pier Cap Transverse in Slab		10h5	8	20'-5"	703
Abutment Paving Notch Bar		8u1	18	2'-1"	100
Stainless Steel Reinforced Total Weight (lbs)					8,374

Estimated Quantities for Superstructure		
Item	Unit	Qty.
* Structural Concrete (Bridge)	C.Y..	359.8
* Fiber Reinf. for Structural Concrete	C.Y..	359.8
Reinf. Steel Epoxy Coated	lbs.	55,161
Reinf. Stainless Steel	lbs.	19,138
Concrete single-slope barrier rail	Lin., ft.	242.0

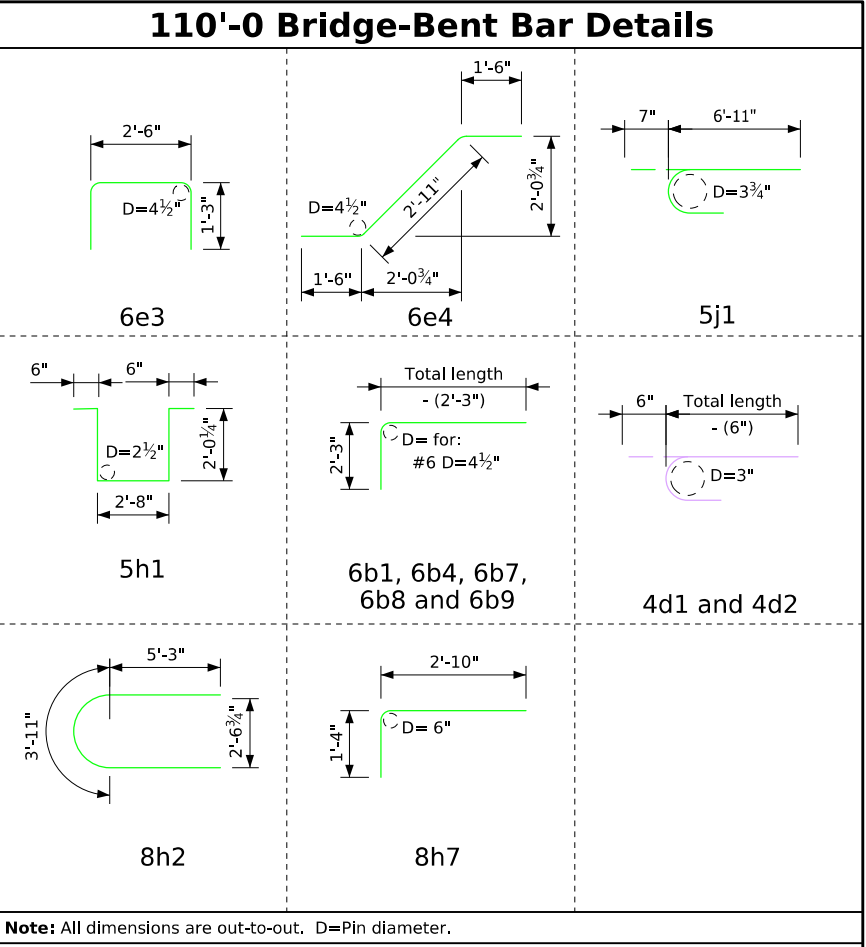
Note:
Concrete and reinforcing steel quantities are included on the summary quantities sheet.

* Includes 4 wings at 1.114 cubic yard each; excludes rail concrete.

FILE NO. 32533	ENGLISH	DESIGN TEAM Kirkham Michael
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Epoxy Reinforcing Steel for Superstructure (Stage 2)					
Location	Shape	Bar	No.	Length	Weight
Slab Longitudinal Bottom		8a1	35	23'-0"	2,149
Slab Longitudinal Bottom		9a2	35	34'-10"	4,145
Slab Longitudinal Bottom		8a3	35	35'-6"	3,317
Slab Longitudinal Bottom		9a4	34	27'-8"	3,198
Slab Longitudinal Bottom		8a5	17	30'-3"	1,373
Slab Longitudinal Bottom, at Rail		9a6	4	39'-11"	543
Slab Longitudinal Bottom, at Rail		9a7	2	41'-10"	284
Slab Longitudinal Bottom, at Rail		8a8	4	26'-2"	279
Slab Longitudinal Bottom, at Rail		8a9	2	27'-11"	149
Slab Longitudinal Top		6b1	35	6'-1"	320
Slab Longitudinal Top		10b2	35	20'-2"	3,037
Slab Longitudinal Top		10b3	35	18'-9"	2,824
Slab Longitudinal Top		6b4	34	32'-5"	1,655
Slab Longitudinal Top		10b5	34	15'-4"	2,243
Slab Longitudinal Top		6b6	17	35'-6"	906
Slab Longitudinal Top		6b7	35	27'-6"	1,446
Slab Longitudinal Top, at Rail		6b8	4	32'-3"	194
Slab Longitudinal Top, at Rail		6b9	4	34'-11"	210
Slab Longitudinal Top, at Rail		6b10	2	29'-2"	88
Slab Longitudinal Top, at Rail		10b11	4	18'-8"	321
Slab Longitudinal Top, at Rail		9b12	4	10'-7"	144
Slab Hairpins at Abutment		6e3	58	5'-0"	436
Slab Diagonal at Abutment		6e4	58	5'-11"	515
Pier Cap Stirrup		5h1	44	7'-9"	356
Pier Cap Longitudinal Ends		8h2	2	14'-5"	77
Pier Cap Pile Ties		8h7	48	4'-2"	534
Top of Slab Transverse at Rail		5j1	159	7'-6"	1,244
Wing Vertical		5m1	20	4'-5"	92
Wing Horizontal Back Face		5n1	12	6'-8"	83
Epoxy Reinforced Total Weight (lbs)					32,162

Stainless Steel Reinforcing Steel for Superstructure (Stage 2)					
Location	Shape	Bar	No.	Length	Weight
Slab Transverse Bottom		5c2	160	27'-6"	4,589
Slab Transverse Top		4d2	160	28'-0"	2,993
Slab Tansverse at Abutment		8e2	18	26'-5"	1,270
Pier Cap Transverse		10h4	8	24'-11"	858
Pier Cap Transverse in Slab		10h6	8	26'-5"	909
Abutment Paving Notch Bar		8u1	26	2'-1"	145
Stainless Steel Reinforced Total Weight (lbs)					10,764



Note:
See Design Sheet No. 9 for Monolithic Pier Cap reinforcing details.

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

Superstructure Quantities

STA. 624+60.00 (US 34)Turn-In Date: August 2026

Adams County

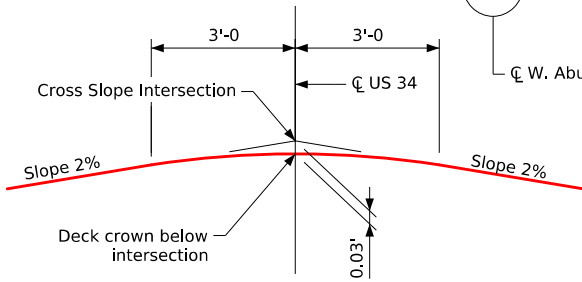
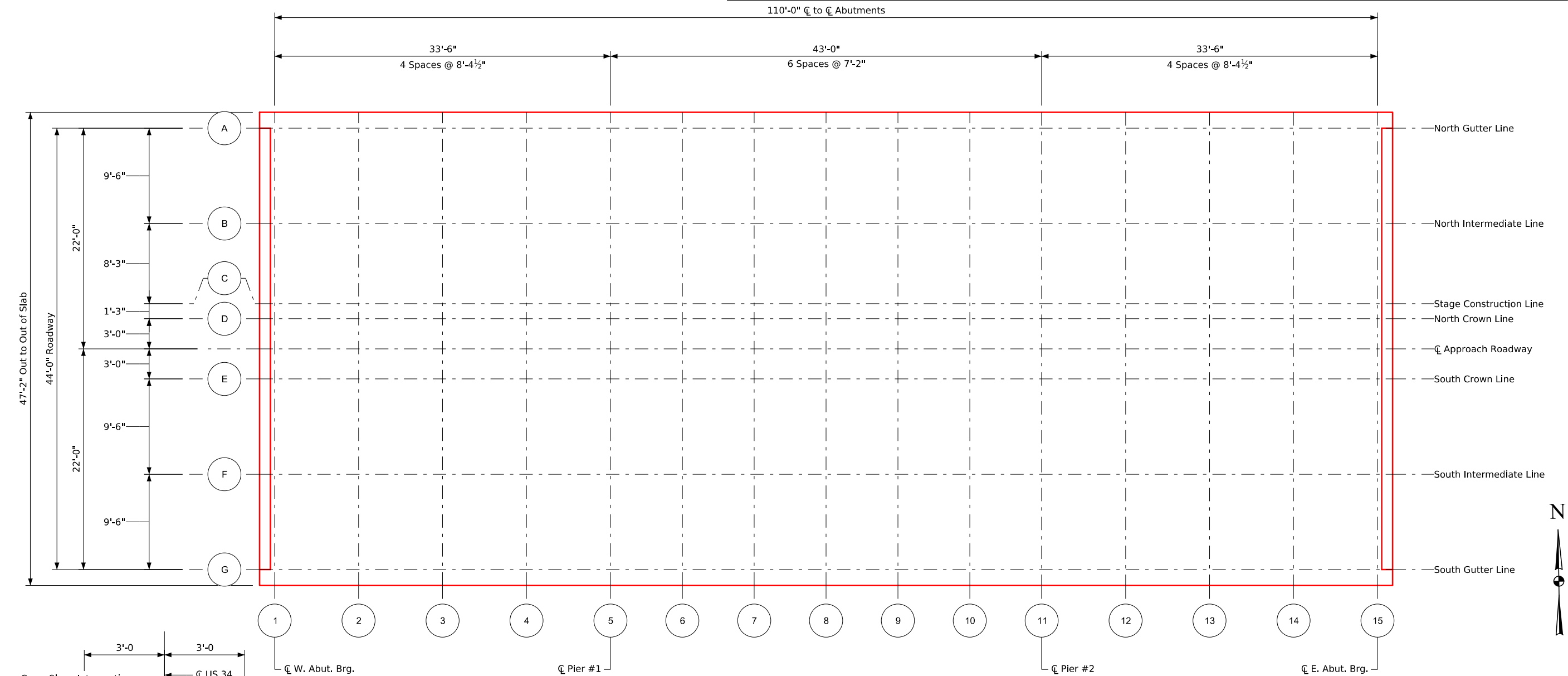
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 15 of 23FHWA No. 013331

Control Point: No. 20340740; N=6223537.15, E=22289916.04, Elev. 1212.01, CP Fnd IDOT Conc Ref. Mon W

Top of Slab Elevations

	℄ W. Abut. Bearing					℄ Pier No. 1					℄ Pier No. 2 Bearings					℄ E. Abut. Bearing
Location	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Line 9	Line 10	Line 11	Line 12	Line 13	Line 14	Line 15	
North Gutter Line (A)	1192.19	1192.23	1192.27	1192.31	1192.35	1192.39	1192.42	1192.46	1192.50	1192.53	1192.57	1192.61	1192.65	1192.69	1192.74	
Intermediate Line (B)	1192.38	1192.42	1192.46	1192.50	1192.54	1192.58	1192.61	1192.65	1192.69	1192.72	1192.76	1192.80	1192.84	1192.88	1192.93	
Stage Joint (C)	1192.54	1192.58	1192.62	1192.67	1192.71	1192.74	1192.78	1192.82	1192.85	1192.89	1192.92	1192.96	1193.01	1193.05	1193.09	
Crown Line (D)	1192.57	1192.61	1192.65	1192.69	1192.73	1192.77	1192.80	1192.84	1192.88	1192.91	1192.95	1192.99	1193.03	1193.07	1193.12	
℄ Approach Roadway	1192.60	1192.64	1192.68	1192.72	1192.76	1192.80	1192.83	1192.87	1192.91	1192.94	1192.98	1193.02	1193.06	1193.10	1193.15	
Crown Line (E)	1192.57	1192.61	1192.65	1192.69	1192.73	1192.77	1192.80	1192.84	1192.88	1192.91	1192.95	1192.99	1193.03	1193.07	1193.12	
Intermediate Line (F)	1192.38	1192.42	1192.46	1192.50	1192.54	1192.58	1192.61	1192.65	1192.69	1192.72	1192.76	1192.80	1192.84	1192.88	1192.93	
South Gutter Line (G)	1192.19	1192.23	1192.27	1192.31	1192.35	1192.39	1192.42	1192.46	1192.50	1192.53	1192.57	1192.61	1192.65	1192.69	1192.74	



Note:
The top of slab elevations for the high point on the bridge deck are 0.03 feet below the high point on the approach roadway to account for the rounding of the deck with a parabolic template at the cross slope intersection.

Top of Slab Elevations

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

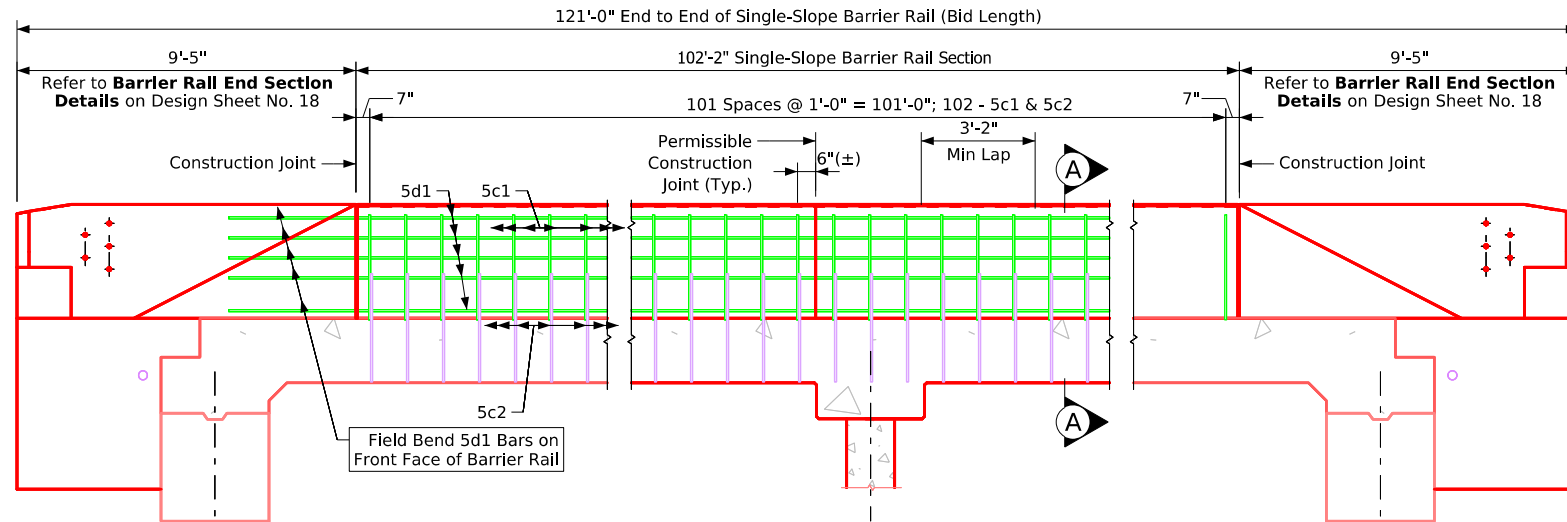
Top of Slab Elevations

STA. 624+60.00 (US 34)Turn-In Date: August 2026

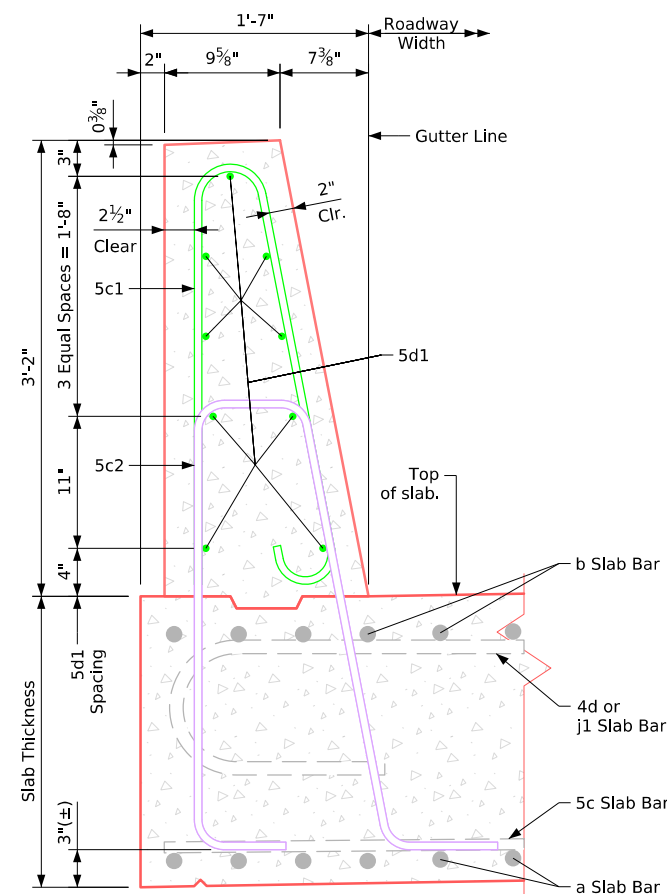
Adams County

IOWA DEPARTMENT OF TRANSPORTATION

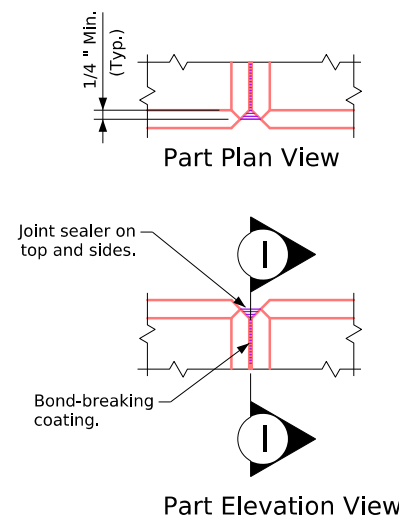
Design No. 127Design Sheet No. 16 of 23FHWA No. 013331



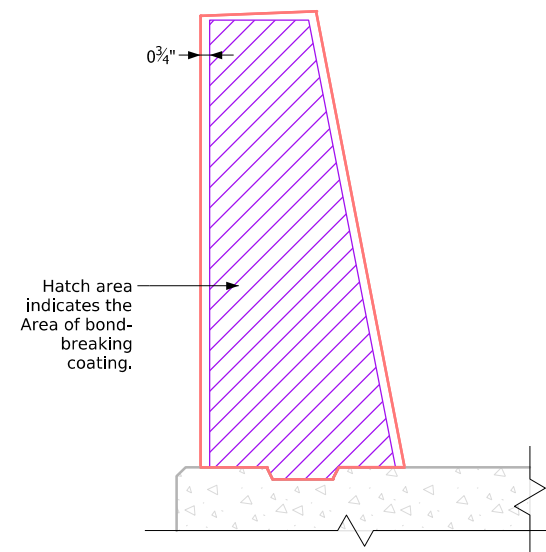
Elevation of Single-Sloped Barrier Rail



Part Section A-A



Barrier Rail Joint Details

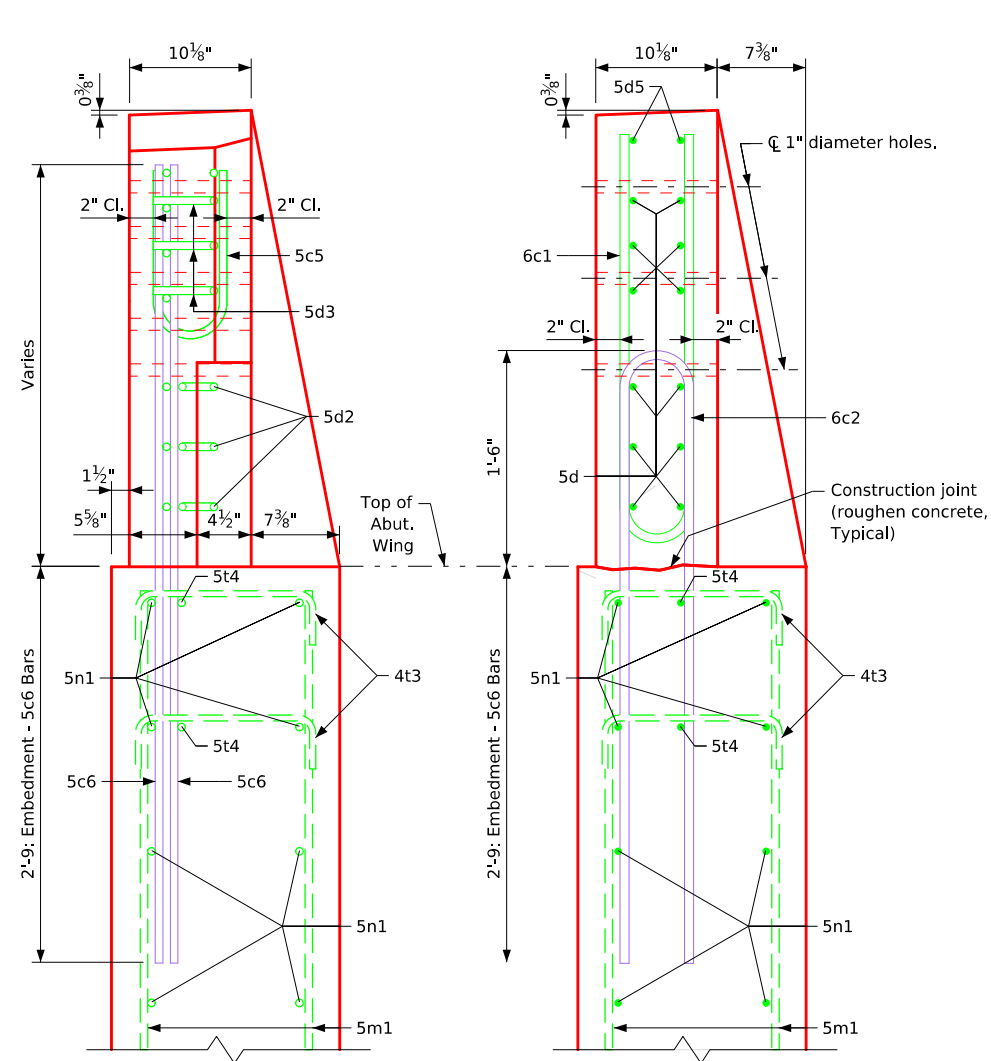


Note:
For **Rail Single-Slope Barrier - Quantities** on Design Sheet No. 20.

Single-slope Barrier Rail Notes:

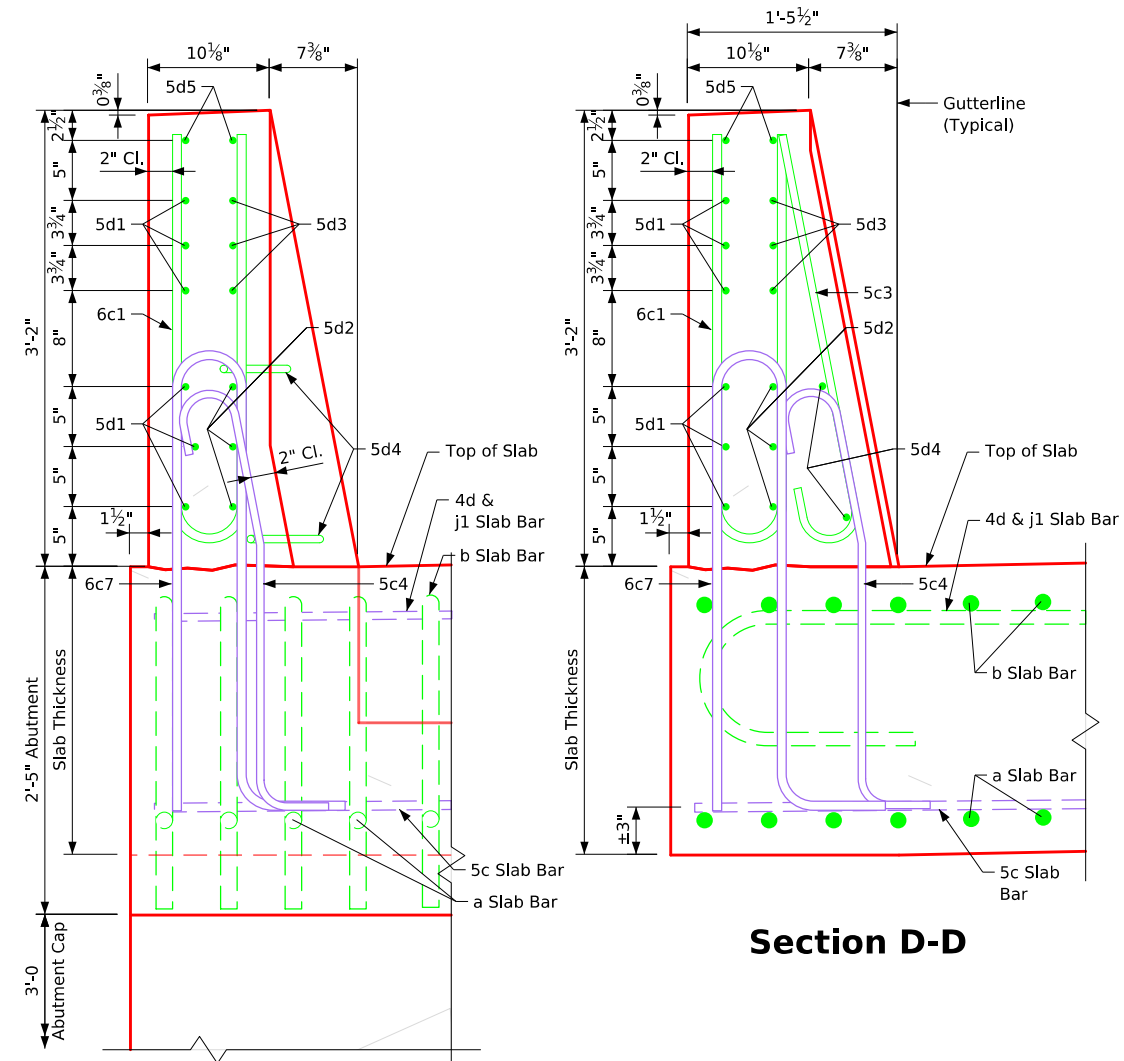
- Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.
- The permissible construction joints are to be placed between vertical bars at a minimum spacing of 20 feet. Construction joint contact surfaces are to be coated with an approved bond breaker.
- Cost of the joint sealer and bond breaker shall be considered incidental to other construction.
- The concrete single-sloped barrier rail is to be bid on a lineal foot basis. The number of lineal feet of barrier rail installed will be paid for at the contract price per lineal foot based on plan quantities. Price bid for **Concrete Barrier Rail** shall be full compensation for furnishing all material, excluding reinforcing steel, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications.
- If conduit is required in this plan the rigid steel conduit, junction boxes and fittings including labor and any additional work to do the installation is considered incidental to the cost of the railing.
- The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. no testing or certification is required.
- Top of the barrier rail is to be parallel to the theoretical centerline grade.
- Cross sectional area of the standard section of the barrier rail = 3.5 square feet.
- All Single-sloped barrier rail reinforcing steel is to be either epoxy coated or stainless steel as shown or noted. The stainless steel reinforcing steel shall be deformed bar Grade 60 meeting the requirements of **Materials I.M.452**.
- Concrete Single-sloped barrier rails placed using the slipform method will require the use of a Class BR concrete in accordance with **Article 2513.03, A, 2, of the Standard Specification**. Cast-in-place barrier rails shall use **Class C mix**. Class D concrete is not permitted for concrete single-sloped barrier rails (cast-in-place or slipformed method).

Design For 0° Skew		
110'-0" x 44'-0" Continuous Concrete Slab Bridge		
33'-6" End Spans		43'-0" Interior Span
Barrier Rail Details		
STA. 624+60.00 (US 34)		Turn-In Date: August 2026
Adams County		
IOWA DEPARTMENT OF TRANSPORTATION		
Design No. 127	Design Sheet No. 17 of 23	FHWA No. 013331



View A-A

Section B-B



Section D-D

Note: For End Section locations, see Design Sheet No. 18.

Note: For barrier rail end section quantities, see Design Sheet No. 20.

Note: For additional barrier-to-abutment wing details, see Design Sheet No. 12.

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans 43'-0" Interior Span

Barrier Rail End Section Details - 2

STA. 624+60.00 (US 34) Turn-In Date: August 2026

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Design No. 127 Design Sheet No. 19 of 23 FHWA No. 013331

Epoxy Reinforcing Steel - Two Barrier Rails

Section	Bar	Location	Shape	No.	Length	Weight
2 Std.Sec	5c1	Vertical		204	6'-8"	1,418
	5d1	Longitudinal		54	38'-9"	2,182
4 End Sec.	6c1	Rail Vertical		48	5'-11"	426
	5c3	Rail Vertical (Traffic Face)		12	3'-5"	42
	5c5	Rail Vertical (End)		16	3'-1"	52
	5d1	Rail Horizontal (Back Face)		24	9'-1"	228
	5d2	Rail Horizontal (Traffic Face)		12	9'-1"	114
	5d3	Rail Horizontal (Traffic Face)		12	9'-6"	118
	5d4	Rail Horizontal (Traffic Face)		8	6'-3"	52
	5d5	Rail Horizontal (Top)		8	9'-1"	76
	4t3	Rail Abutment Wing Tie Bars		24	2'-0"	32
	5t4	Wing Horizontal (Tie Bars)		8	3'-8"	30
Epoxy Reinforced Total Weight (lbs)				Total	4,770	

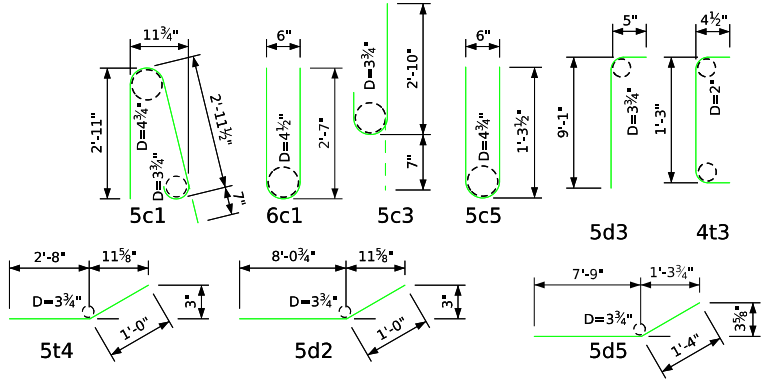
Stainless Steel Reinforcing Steel - Two Barrier Rails

Section	Bar	Location	Shape	No.	Length	Weight
2 Std. Sec	5c2	Vertical		204	7'-4"	1,560
4 End Sec	6c2	Rail, Vertical		20	9'-0"	270
	5c4	Rail Vertical (Traffic Face)		24	3'-7"	90
	5c6	Rail , Vertical (End)		32	5'-8"	190
	6c7	Rail, Vertical (Slab/Abut.)		28	6'-11"	290
Stainless Steel Reinforced Total Weight (lbs)				Total	2,400	

Concrete Placement Summary

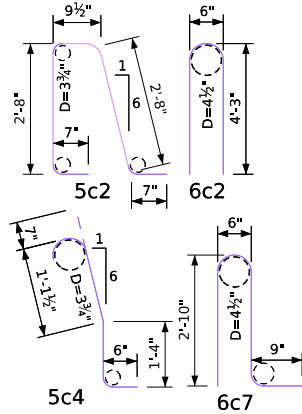
Standard Section	2 x 102'-2" @ 0.1301 cu.yd. per ft.	26.6
End Section	4 @ 1.00 cu.yd.	4.0
Total (cu.yd.)		30.6

Epoxy Bent Bar Details



Note: All dimensions are out to out. D = Pin Diameter

Stainless Bent Bar Details



Note: All dimensions are out to out. D = Pin Diameter

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

Barrier Rail Quantities

STA. 624+60.00 (US 34)Turn-in Date: August 2026

Adams County

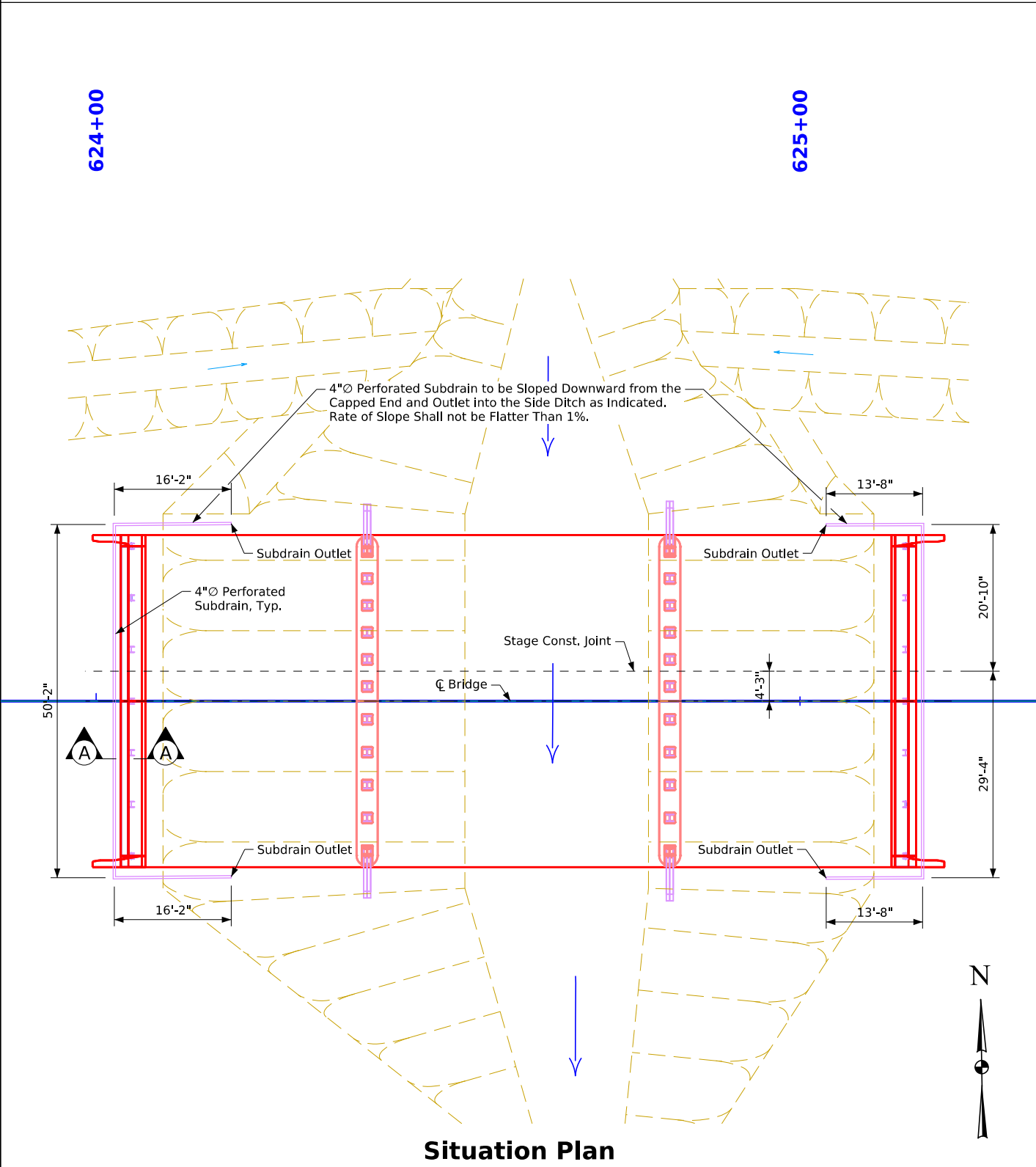
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 20 of 23FHWA No. 013331

Revised 10-14 - Two Additional Foreslope Protection Details were Added Outside of the Border to Show Revetment up to Back of Abutment Footing.
Revised 06-2024; Changed Control Point text (was Bench Mark).
ForeslopeProtectionBridges.dgn - 1007C - This Sheet Issued 06-02 for Water Crossings.
ForeslopeProtectionBridges.dgn - 1007C - This Sheet Redrawn 07-23.

Note: Section A-A is shown on
Abutment Backfill Details
Sheet on Design Sheet No. 22.

Control Point: No. 20340740; N=6223537.15, E=22289916.04, Elev. 1212.01, CP Fnd IDOT Conc Ref. Mon W



Subdrain Notes:

This plan sheet shows details for placing all subdrains and subdrain outlets required for this structure.

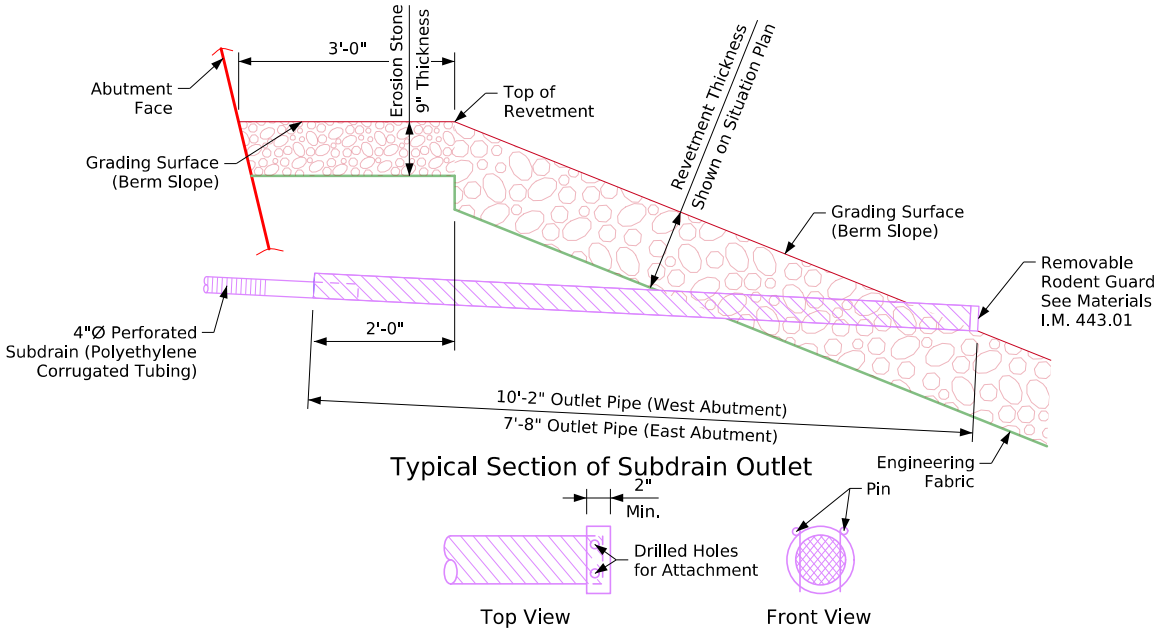
The subdrains shall be 4"Ø and shall be in accordance with Article 4143.01, B, of the Standard Specifications.

The subdrain outlet shall consist of a length of pipe with a removable rodent guard as detailed on this sheet. The length of the outlet pipe shall be determined by the revetment and its placement location. The Contractor is to insure the outlet pipe is adequately strong enough and will not be damaged when revetment is placed. A check will be made at the subdrain outlet to insure that the subdrain is not damaged and is draining properly during the backfill flooding process. If a metal outlet pipe is used, it shall be 6"Ø and coupled to the 4"Ø subdrain in one of the two following ways.

- Use an inside fit reducer coupler (coupler must be inserted a minimum of 1'-0" into the metal outlet pipe).
- Insert 1'-0" of the 4"Ø subdrain into the 6"Ø metal outlet pipe, then fully seal the entire opening with grout.

The cost of furnishing and placing subdrain (including excavation), granular backfill, porous backfill, and subdrain outlet is to be included in the price bid for "Structural Concrete (Bridge)". No extra payment will be made.

The dimensions shown for the proposed subdrains are based on the proposed grading layout of bridge berms. The dimensions shown are for estimating only. Required lengths and general locations of subdrains are subject to change due to field adjustments of the grading layout.



Revetment Stone (Embedded) Outlet Details

Subdrain Outlet Elevations	
Location	Elevation
West Abutment	1186.20
East Abutment	1186.80

Design For 0° Skew

110'-0" x 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans43'-0" Interior Span

Subdrain Details

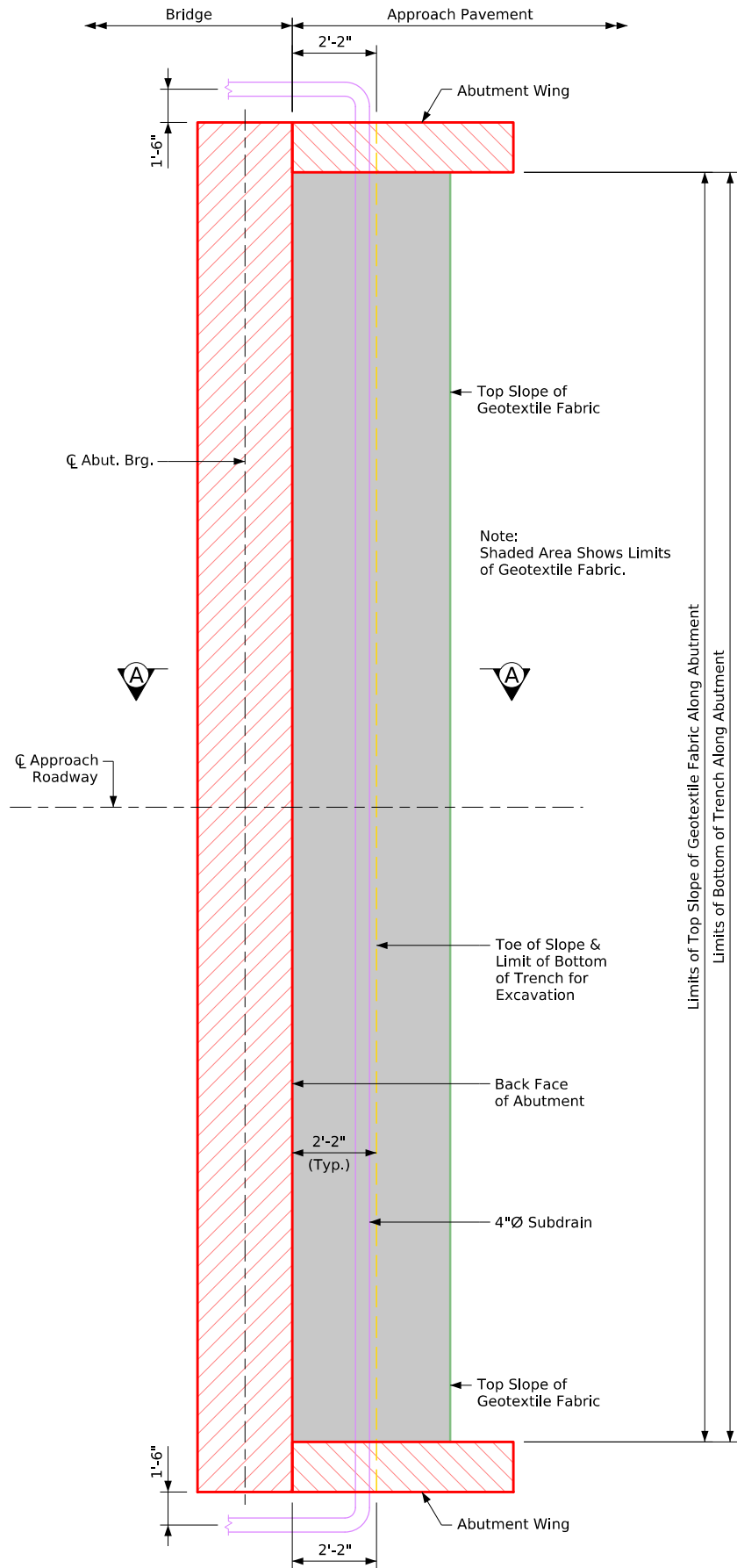
STA. 624+60.00 (US 34)Turn-in Date: August 2026

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IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127Design Sheet No. 21 of 23FHWA No. 013331

Revised 09-14 - The Technical Data Information Table was Removed and is Located in the Standard Specifications. Changed Surface Flooding Time to 5 Minute Increments.
Revised 09-16 - Changed the Bridge Approach Pavement Standard to "BR" (was "RK").
ForeSlopeProtectionBridges.dgn - 1007D - This Sheet Issued 08-07.
ForeSlopeProtectionBridges.dgn - 1007D - This Sheet Redrawn 07-23.



Abutment Plan without Wing Extensions

Abutment Backfill Process:

The base of the excavation subgrade behind the abutment is to be graded with a 4% slope away from the abutment footing and a 2% cross slope in the direction of the subdrain outlet. This excavation shaping is to be done prior to beginning installation of the geotextile and backfill material.

After the subgrade has been shaped, the geotextile fabric shall be installed in accordance with the details shown. The fabric is intended to be installed in the base of the excavation and extended vertically up the abutment backwall, abutment wing walls, and excavation face to a height that will be approximately 1 to 2 ft higher than the height of the porous backfill placement as shown in the "Backfill Details" on this sheet. The strips of the fabric placed shall overlap approximately 1 ft and shall be pinned in place. The fabric shall be attached to the abutment by using lath folded in the fabric and secured to the concrete with shallow concrete nails. The fabric placed against the excavation face shall be pinned.

When the fabric is in place, the subdrain shall be installed directly on the fabric at the toe of the rear excavation slope. A slot will need to be cut in the fabric at the point where the subdrain exits the fabric near the end of the abutment wing wall.

Porous backfill is then placed and leveled, no compaction is required.

The remaining work involves backfilling with floodable backfill, surface flooding, and vibratory compaction. The floodable backfill material shall be in accordance with the Standard Specifications. The floodable backfill shall be placed in individual lifts, surface flooded, and compacted with vibratory compaction to ensure full consolidation. Limit the loose lifts to no more than 2 ft of thickness.

Start surface flooding for each floodable backfill lift at the high point of the subdrain and progress to the low point where the subdrain exits the fabric. To ensure uniform surface flooding, water running full in a 2"Ø hose should be sprayed in successive 6 ft to 8 ft increments for 5 minutes within each increment.

Floodable backfill lift placement, flooding, and compaction shall progress until the required full thickness of the abutment backfill has been completed.

Water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric furnished at the bridge abutments will not be measured separately for payment.

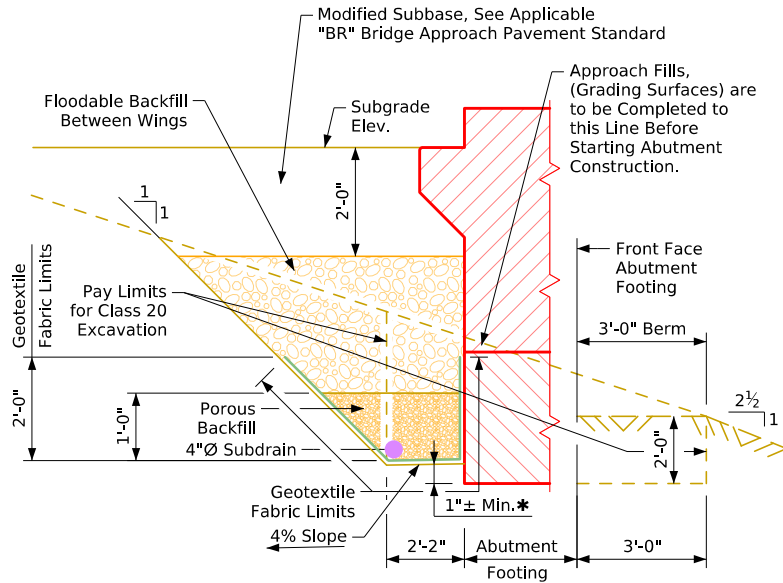
The cost of water required for flooding, subdrains, porous backfill, floodable backfill, and geotextile fabric furnished at the bridge abutments shall be included in the contract unit price bid for "Structural Concrete (Bridge)".

Note:

Subdrain shall slope downward 2% from $\mathcal{C}$ approach roadway when outletting both sides of the abutment.

Subdrain shall slope downward 2% from high end when outletting at one end of the abutment.

The geotextile fabric shall be in accordance with Article 4196.01, B, 6 of the Standard Specifications. If the engineering fabric is lapped the laps shall be a minimum of 1 ft in length, shingle fashion with up slope lap piece on top and stapled for continuity.



Section A-A

Backfill Details

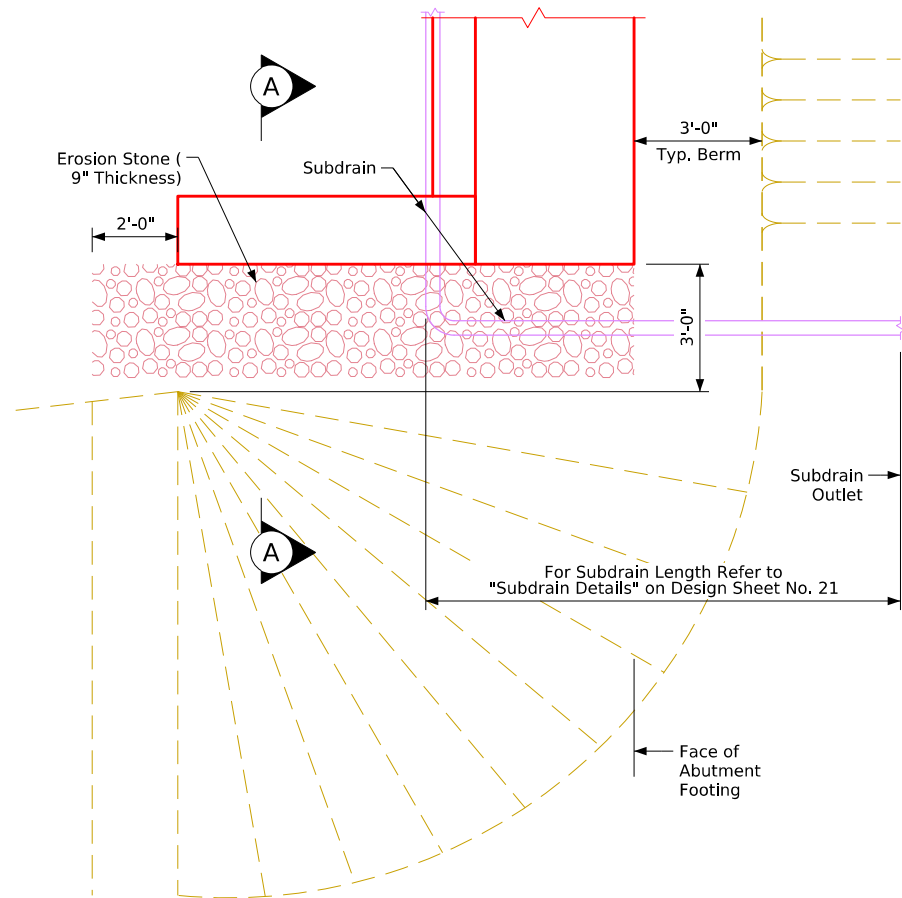
Note: Geotextile Fabric will be Attached to Face of Abutment Footing and Wings.

* Dimension Varies Due to 2% Subdrain Slope.

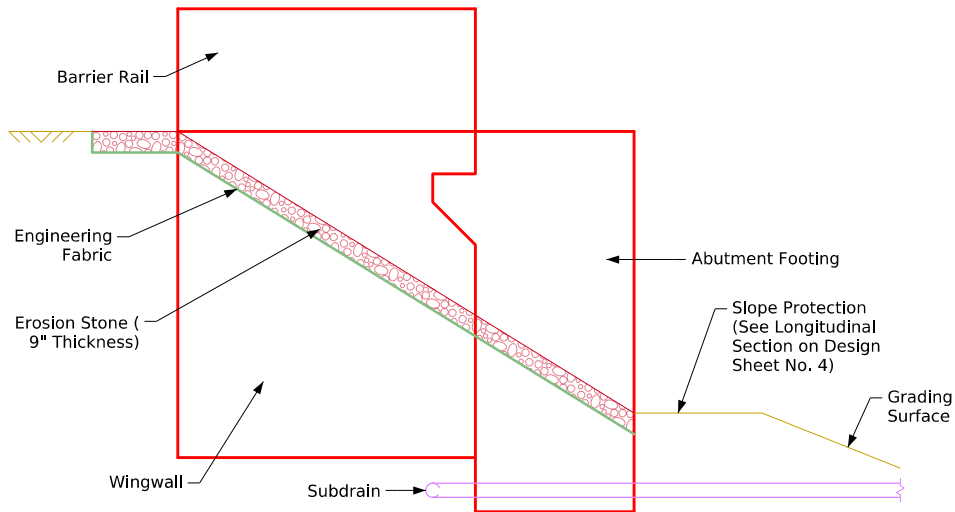
Note:
For Details not Shown on this Sheet which are Pertinent to this Structure See Subdrain Details Sheet on Design Sheet No. 21.

Design For 0° Skew		
110'-0" x 44'-0" Continuous Concrete Slab Bridge		
33'-6" End Spans		43'-0" Interior Span
Abutment Backfill Details		
STA. 624+60.00 (US 34)		Turn-in Date: August 2026
Adams County		
IOWA DEPARTMENT OF TRANSPORTATION		
Design No. 127	Design Sheet No. 22 of 23	FHWA No. 013331

Revised 06-14 - Added 2 Feet of Length of Erosion Stone in Front of the Bridge Wing.
Revised 09-2023: Changed direction of Section Director Arrows "A-A" to match what section view "Section A-A" is showing.
ForeSlopeProtectionBridges.dgn - 1005A - This Sheet Issued 06-02.
ForeSlopeProtectionBridges.dgn - 1005A - This Sheet Issued 07-23.

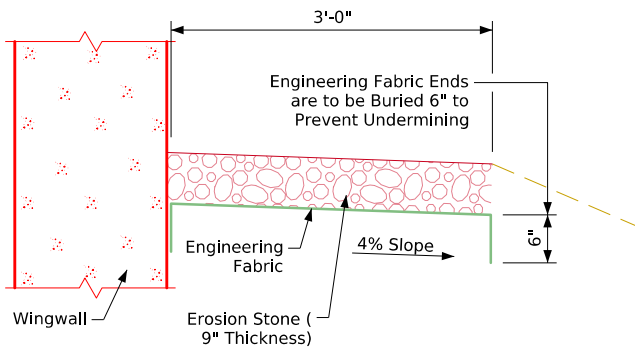


Top View of Wing Armoring



Profile View of Wing Armoring
(Shown for Integral Abutment)

A Check Shall be Made at the Subdrain Outlet to Insure that it is Draining Properly During the Backfill Flooding Process.



Section A-A

General Notes:

Erosion stone shall be placed along the sides of the wings and abutment footing as shown in Section A-A. This is typical at each corner of the bridge unless otherwise noted in the plans. The erosion stone at these locations shall be underlayed with engineering fabric in accordance with Article 4196.01, B, 3, of the Standard Specifications.

The erosion stone shall be in accordance with Section 4130, of the Standard Specifications. Material passing the 3 inch screen but 100% retained on a 1 inch screen may be used as choke stone.

The erosion stone shall be deposited, spread, consolidated and shaped by mechanical or hand methods that will provide uniform 9 inch depth and density and provide uniform surface appearance.

Payment for the bridge wing armoring will be bid per square yard. Cost will include engineering fabric, erosion stone, excavation, shaping, and compaction to dimensions shown in these plans. Bid item shall be "Bridge Wing Armoring - Erosion Stone".

Design For 0° Skew		
110'-0" x 44'-0" Continuous Concrete Slab Bridge		
33'-6" End Spans		43'-0" Interior Span
Bridge Wing Armoring		
STA. 624+60.00 (US 34)		Turn-In Date: August 2026
Adams County		
IOWA DEPARTMENT OF TRANSPORTATION		
Design No. 127	Design Sheet No. 23 of 23	FHWA No. 013331

THIS SHEET IS INCLUDED TO SHOW
SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE
IN THESE PLANS SHALL BE USED FOR
STRUCTURE CONSTRUCTION.

N

GEOTECHNICAL DESIGN



I hereby certify that this engineering document was prepared
by me or under my direct personal supervision and that I
am a duly licensed Professional Engineer under the laws of
the State of Iowa.

Xinyi Jiang

8/19/25

Signature

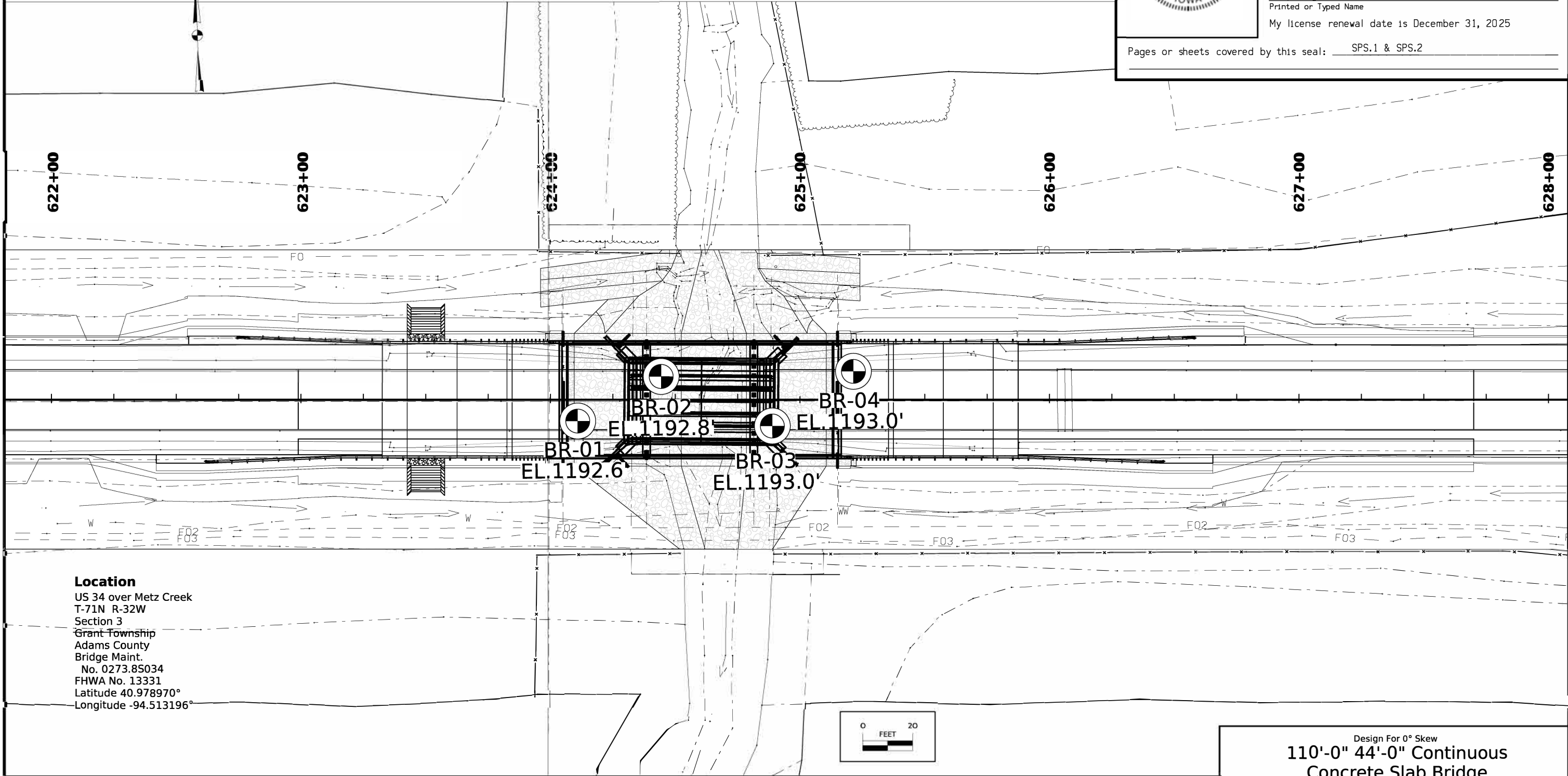
Date

Xinyi Jiang

Printed or Typed Name

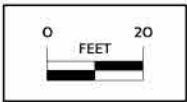
My license renewal date is December 31, 2025

Pages or sheets covered by this seal: SPS.1 & SPS.2



Location

US 34 over Metz Creek
T-71N R-32W
Section 3
Grant Township
Adams County
Bridge Maint.
No. 0273.85034
FHWA No. 13331
Latitude 40.978970°
Longitude -94.513196°



Design For 0° Skew
**110'-0" 44'-0" Continuous
Concrete Slab Bridge**

Soil Profile Sheet

STA. 264+60.00 (US 34)

Adams County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 127

Design Sheet No. 1 of 2

FHWA/Asset 13331

FILE NO. 35533

ENGLISH

DESIGN TEAM HR Green, Inc/Braun Intertec

ADAMS COUNTY

PROJECT NUMBER BRF-034-3(039)--38-02

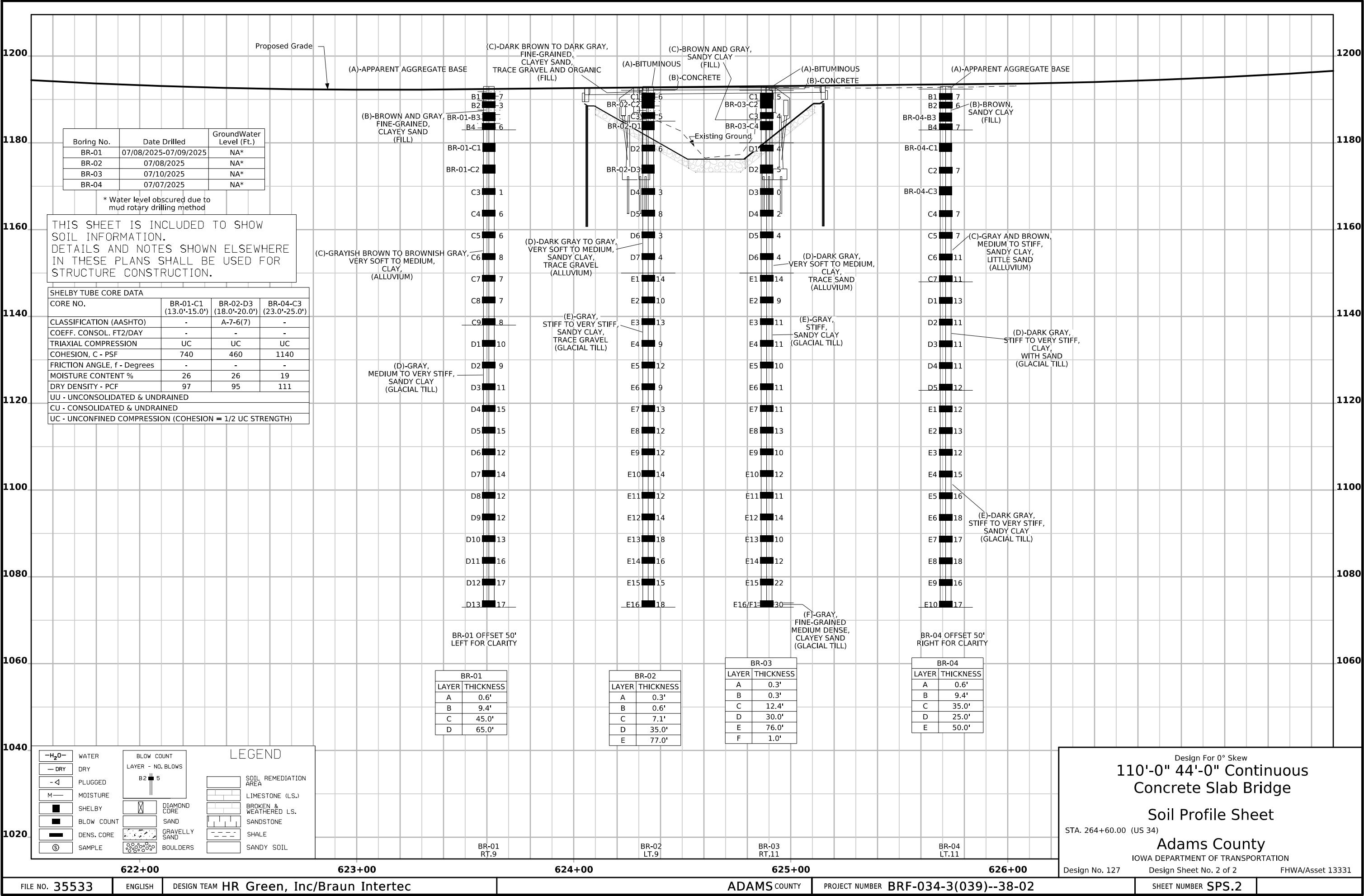
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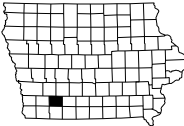
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8/19/2025

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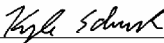


INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.3	Road Design Signature and Sheet Index
B Sheets	Typical Cross Sections and Details
B.1 - 5	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1 - 2	Estimated Project Quantities and Reference Notes
C.3 - 9	Tabulations
CS Sheets	Soils Tabulations
CS.1	Soils Tabulations
D Sheets	Mainline Plan and Profile Sheets
D.1	Plan & Profile Legend & Symbol Information Sheet
D.2	"ML034"
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan and Staging Notes
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R Sheets	Erosion Control Sheets
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RR.1	Erosion Control Legend and Symbol Information Sheet
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T Sheets	Earthwork Quantity Sheets
T.1 - 2	Earthwork Legend Sheets
T.3 - 5	Earthwork Quantity Sheet
U Sheets	500 Series, Mod.Stds. and Detail Sheets
U.1 - 2	Modified DR-402
W Sheets	Mainline Cross Sections
W.1 - 9	Mainline Cross Sections

DESIGN DATA RURAL			
2027	AADT	<u>2,600</u>	V.P.D.
2047	AADT	<u>3,000</u>	V.P.D.
2047	DHV	<u>310</u>	V.P.H.
TRUCKS		<u>21</u>	%
Total			
Design ESALs		<u>—</u>	



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.



06-09-2026

Signature
Kyle T. Schrock

Printed or Typed Name

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: A.3, B.1-B.5, C.1-C.9, D.1-D.2, G.1-G.4, J.1-J.6, T.1-T.5, U.1-U.2, W.1-W.9

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2 or L-2
Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		Feet
621+00.00	622+98.90	10
627+70.00	630+20.00	10

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2 or L-2
Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		Feet
621+00.00	622+98.90	10
627+70.00	630+20.00	10

Paved Shoulder at Guardrail

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_04-21-20		
STATION TO STATION		Feet
622+54.45	622+74.45	3.5
622+74.45	623+28.86	3.5-1.33
623+28.86	623+32.56	1.33
625+87.44	626+03.64	1.33
626+03.64	626+58.05	1.33-3.5
626+58.05	626+78.05	3.5

Paved Shoulder at Guardrail

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_04-21-20		
STATION TO STATION		Feet
622+41.95	622+61.95	3.5
622+61.95	623+16.36	3.5-1.33
623+16.36	623+32.56	1.33
625+87.44	625+91.14	1.33
625+91.14	626+45.55	1.33-3.5
626+45.55	626+65.55	3.5

Full Depth PCC Shoulder

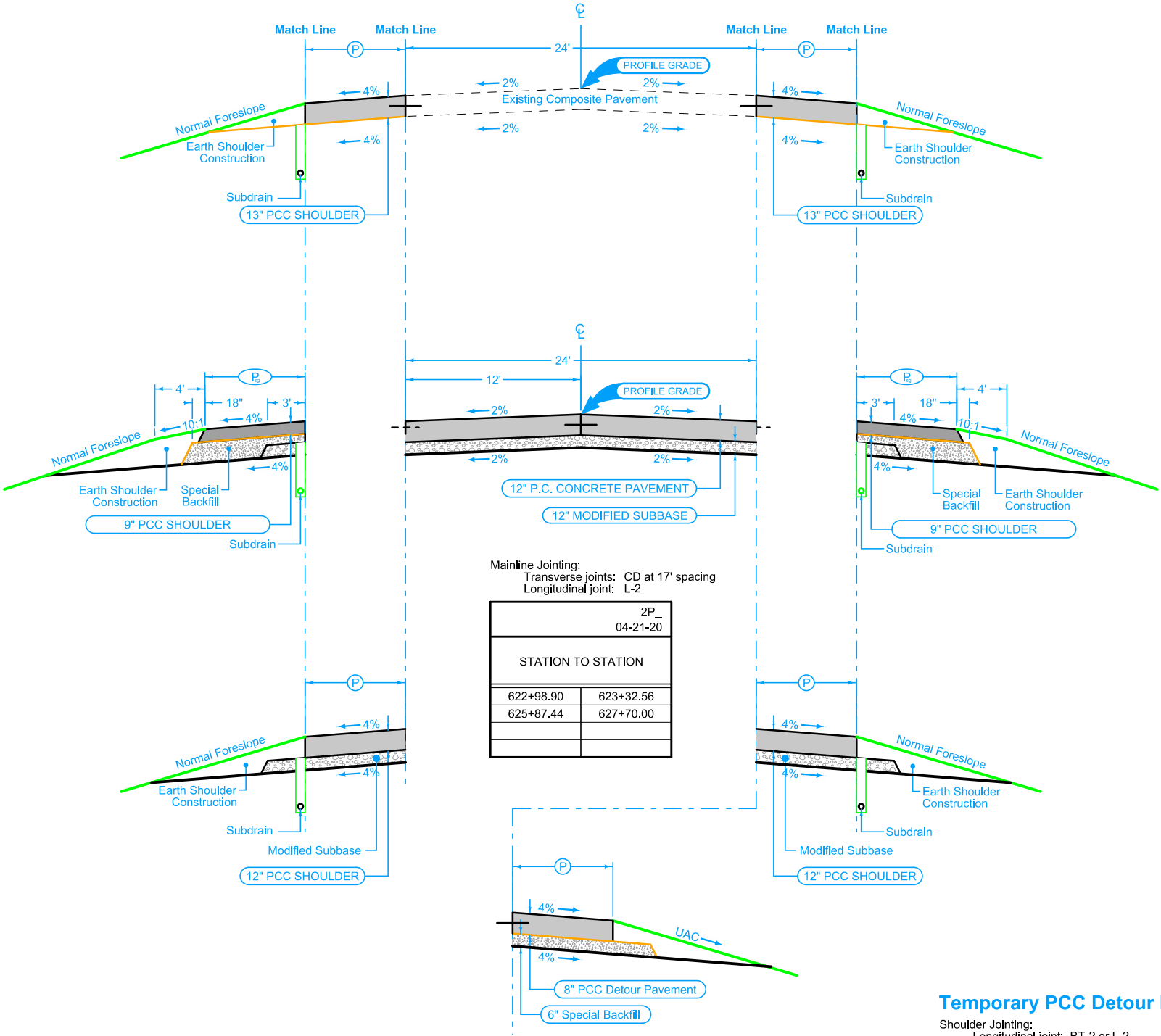
Shoulder Jointing:
Longitudinal joint: BT-2 or L-2
Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		Feet
622+98.90	623+32.56	10
625+87.44	627+70.00	10

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2 or L-2
Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		Feet
622+98.90	623+32.56	10
625+87.44	627+70.00	10



Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

2P_04-21-20		
STATION TO STATION		
622+98.90	623+32.56	
625+87.44	627+70.00	

Temporary PCC Detour Pavement

Shoulder Jointing:
Longitudinal joint: BT-2 or L-2
Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		Feet
621+00.00	624+34.30	3.7
624+85.64	630+20.00	3.7

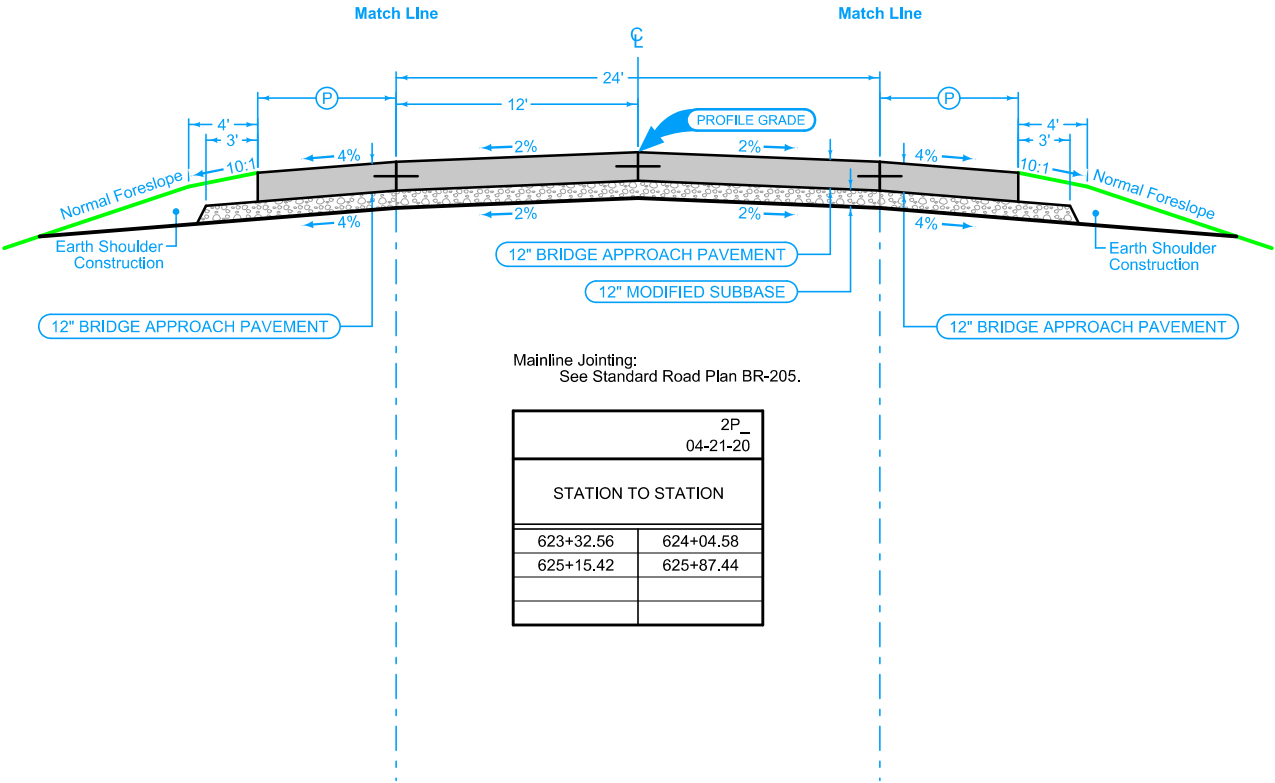
- General Notes:
- See Tab 100-24 for Pavement quantities.
 - See Tab 112-09 for Granular Shoulder quantities.

US 34
Paved Shoulder at Guardrail,
Paved Shoulder, and Detour Pavement

Shoulder at Bridge Approach

Mainline Jointing:
See Standard Road Plan BR-205.

2_P_FullPCC_04-20-21		
STATION TO STATION		(P) Feet
623+32.56	624+04.58	11.32
625+15.42	625+87.44	11.32



Mainline Jointing:
See Standard Road Plan BR-205.

2P_04-21-20		
STATION TO STATION		
623+32.56	624+04.58	
625+15.42	625+87.44	

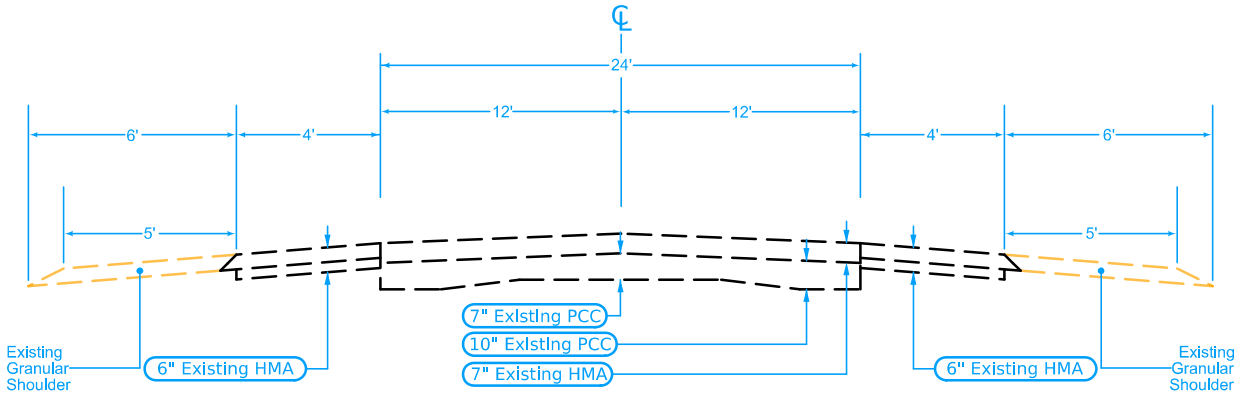
Shoulder at Bridge Approach

Mainline Jointing:
See Standard Road Plan BR-205.

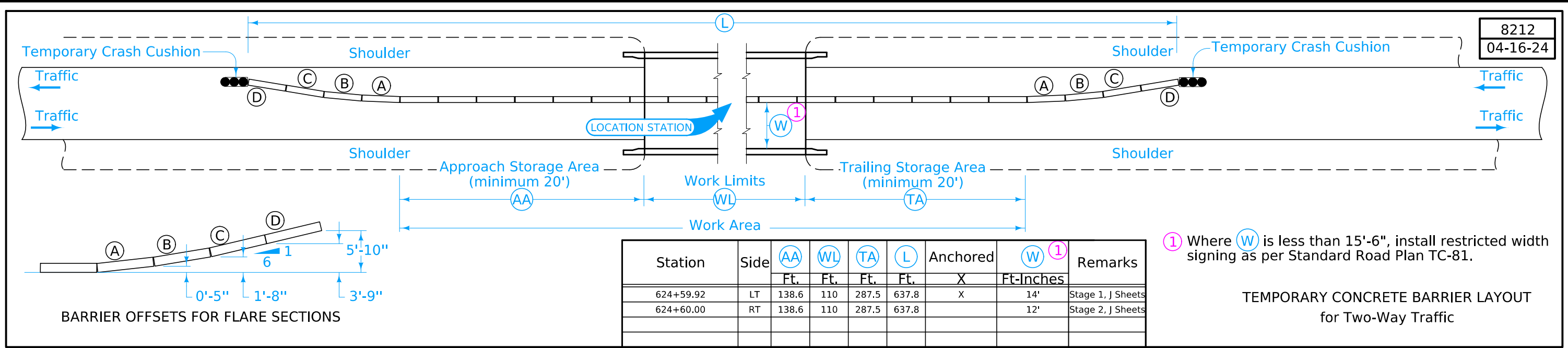
2_P_FullPCC_04-20-21		
STATION TO STATION		(P) Feet
623+32.56	624+04.58	11.32
625+15.42	625+87.44	11.32

- General Notes:
1. See Standard Road Plan BR-205 for details.
 2. See Tab 100-24 for Pavement quantities.
 3. See Tab 112-06 for Bridge Approach quantities.
 4. See Tab 112-09 for Granular Shoulder quantities.

US 34
Bridge Approach Pavement



US 34
Existing Composite Pavement



ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2102-0425070	SPECIAL BACKFILL	TON	251.2	Item includes 203.8 Ton for Detour Pavement. Refer to Tab. 100-24 on C Sheets. Item includes 47.4 Ton for Paved Shoulder. Refer to Tab. 112-9 on C Sheets.
2	2102-2625000	EMBANKMENT-IN-PLACE	CY	140	Refer to T Sheets.
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	904	
4	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	841	Refer to T Sheets. Quantity will be computed on the basis of a uniform 12 inch cut, or the depth as specified in the contract documents over the area involved. Sufficient field measurements will be taken to assure reasonable conformity with the required depth of cut. Uniformly spread excess topsoil across foreslopes.
5	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	833	Refer to Tab. 103-6 on CS Sheets and Tab. 107-28 on T Sheets.
6	2115-0100000	MODIFIED SUBBASE	CY	423	Item includes 192.2 CY for PCC Pavement. Refer to Tab. 100-24 on C Sheets. Item includes 230.8 CY for PCC Shoulder. Refer to Tab. 112-9 on C Sheets.
7	2122-5190009	PAVED SHOULDER, P.C. CONCRETE, 9 IN.	SY	94.9	Refer to Tab. 112-9 on C Sheets.
8	2122-5190012	PAVED SHOULDER, P.C. CONCRETE, 12 IN.	SY	480.5	
9	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	13.4	
10	2301-0690205	BRIDGE APPROACH, BR-205	SY	727.7	Refer to Tab. 112-6 on C Sheets.
11	2301-1033120	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 12 IN.	SY	576.6	Refer to Tab. 100-24 on C Sheets.
12	2304-0100000	DETOUR PAVEMENT	SY	357.2	
13	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK AND/OR APPROACHES	SY	1,119.9	Refer to Tab. 100-28 on C Sheets.
14	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	2,154.3	Refer to Tab. 104-9 on CS Sheets.
15	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	16	
16	2503-0500402	BRIDGE END DRAIN, DR-402	EACH	2	Refer to Tab. 104-8A on C Sheets.
17	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	328.3	Refer to Tab. 110-7A on C Sheets.
18	2505-4008300	STEEL BEAM GUARDRAIL	LF	175	Refer to Tab. 108-8A on C Sheets.
19	2505-4008415	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-209	EACH	4	

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
20	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4	
21	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	4	
22	2510-6745850	REMOVAL OF PAVEMENT	SY	2,249.8	Refer to Tab. 110-1 on C Sheets.
23	2520-3350015	FIELD OFFICE	EACH	1	Refer to Tab. 108-22 on C Sheets.
24	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	39.64	
25	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	39.64	
26	2527-9263231	REMOVABLE TAPE MARKINGS, WET RETROREFLECTIVE	STA	42.2	
27	2527-9270112	GROOVES CUT FOR PAVEMENT MARKINGS	STA	26.99	Refer to Tab. 108-33 on C Sheets.
28	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	1,276.2	
29	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	1	Refer to Tab. 108-28 on C Sheets.
30	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Traffic Control Plan on J Sheets.
31	2548-0000200	MILLED SHOULDER RUMBLE STRIPS, PCC SURFACE	STA	13.7	Refer to Tab. 112-10 on C Sheets.
32	2548-0000320	MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE	STA	2.16	
33	2551-0000110	TEMP CRASH CUSHION	EACH	4	Refer to Tab. 108-30 on C Sheets.
34	2599-9999018	('SQUARE YARDS' ITEM) PAVED SHOULDER, P.C. CONCRETE, 13 IN.	SY	997.6	Section 2122 of the Standard Specifications applies.

100-1D 10-18-05 PROJECT DESCRIPTION
This project involves a bridge replacement on US34 over Metz Creek West of IA 25. Traffic along US34 will be maintained at all times via staged construction.

105-4 10-18-11 STANDARD ROAD PLANS
The following Standard Road Plans apply to construction work on this project.

BA-200	10/20/2026	Steel Beam Guardrail Components
BA-202	10/20/2026	Steel Beam Guardrail Bolted End Anchor
BA-205	10/17/2023	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-209	10/15/2024	Steel Beam Guardrail Barrier Transition Section (Mash TL-3, 34" Mounting Height)
BA-250	10/20/2026	Steel Beam Guardrail Installation at Concrete Barrier or Bridge Rail End Section (MASH TL-3)
BA-401	4/20/2021	Temporary Barrier Rail (Precast Concrete)
BA-500	10/18/2022	Temporary Crash Cushions Sand Barrel
BR-205	10/21/2025	Double Reinforced 12 inch Approach (Slab Bridge)
DR-303	10/17/2017	Subdrains (Longitudinal)
DR-306	10/17/2023	Precast Concrete Headwall for Subdrain Outlets
EW-301	4/16/2024	Guardrail Grading
PM-110	10/15/2024	Line Types
PM-115	4/15/2025	Grooving for Line Types
PV-012	4/16/2024	Milled Shoulder Rumble Strips
PV-013	4/16/2024	Milled Centerline Rumble Strips
PV-101	10/21/2025	Joints
SI-173	4/19/2016	Object Markers
SI-211	10/18/2022	Object Marker and Delineator Placement with Guardrail
SI-881	4/16/2019	Special Signs for Workzones
TC-001	10/15/2019	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-081	4/18/2023	Restricted Width Signing (Less Than 15.5 Feet)
TC-202	4/18/2023	Work Within 15 ft of Traveled Way
TC-216	4/18/2023	Lane Closure with Signals
TC-217	10/21/2025	Lane Closure with Signals and TBR

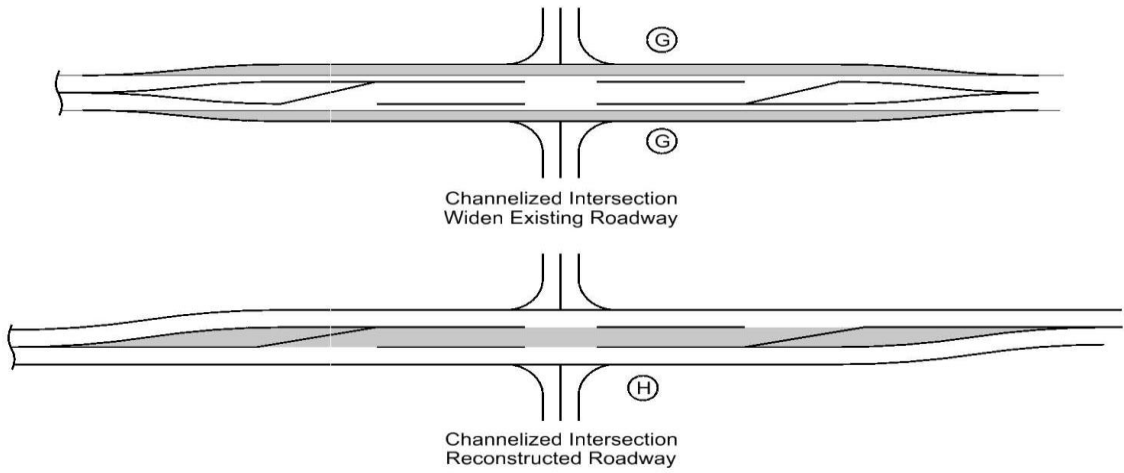
262-5 10-18-05 UTILITIES (POINT 25 PROJECT)
This is a POINT 25 project and is subject to the provisions of IAC 761-115.25.

111-25 10-18-11 INDEX OF TABULATIONS		
Tabulation	Tabulation Title	Sheet No.
100-1D	Project Description	C.3
100-24	PCC Pavement	C.5
100-28	Longitudinal Grooving	C.9
102-5	Existing Pavement	C.4
104-8A	Scour Protection or Rock Flume for Bridge End Drain	C.7
105-4	Standard Road Plans	C.3
107-23	Grading for Guardrail Installations	C.7
108-8A	Steel Beam Guardrail at Concrete Barrier or Bridge Rail End Section	C.7
108-22	Pavement Marking Line Types	C.9
108-28	Temporary Traffic Signals	C.8
108-30	Crash Cushions	C.8
108-33	Temporary Barrier Rail	C.8
110-1	Removal of Pavement	C.4
110-7A	Removal of Steel Beam Guardrail	C.8
111-25	Index of Tabulations	C.3
112-6	Bridge Approach Section	C.7
112-9	Shoulders	C.6
112-10	Milled Rumble Strips	C.8

REMOVAL OF PAVEMENT

* Not a Bid Item

FILE NO. **32533** | ENGLISH | DESIGN TEAM **SCHROCK\MCNAMARA\INGRAM**



- [illegible]

- Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

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108-33

10-15-19

TEMPORARY BARRIER RAIL

Possible Standard: BA-401 Possible Detail: 560-7

* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.

No.	Station to Station		Length	(Select One)		Anchored*	Modular Glare	Remarks
			LF	Concrete	Steel		Screen System	
				BA-401	560-7		(Y/N)	
	622+15.40	628+53.50	638.1	x		Yes	No	Stage 1, Refer to J Sheets
	622+15.40	628+53.50	638.1	x		No	No	Stage 2, Refer to J Sheets
		Total(s):	1276.2					

108-30 04-16-13																				
CRASH CUSHIONS																				
* Bid Item																				
① Lane(s) to which the installation is adjacent.																				
② Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500																				
No.	① Direction of Traffic	Location Station	Side	Obstacle Width	Crash Cushion (Select One)*					Sand Barrel Details ②					Earthwork*		Spare Parts Kit (Select One)*		Obstacle Description	Remarks
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V	W	X	Y	Z	Excavation Class 10	Embankment in Place	Permanent	Permanent Severe Use		
										Length	Length	Length	Length	Length						
				FT				FT						FT	FT	FT	FT	FT		
	EB	622+15.25	LT	1.90	X														End of TBR	Stage 1
	EB	628+53.65	LT	1.90	X														End of TBR	Stage 1
	WB	622+15.25	Rt	1.90	X														End of TBR	Stage 2
	WB	628+53.65	Rt	1.90	X														End of TBR	Stage 2
		Totals:			4															

112-10 10-20-20												
MILLED RUMBLE STRIPS												
See PV-12 and PV-13												
* Calculated at 18" width for Shoulder.												
Road Identification	Location				L	Installation Length		Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
	Station to Station		Shoulder Pavement Type	Rumble Strip Type (Centerline, Rt or Lt Shoulder)		PCC	HMA		PCC Paved	HMA Paved	Granular\ Earth	
						Shoulder						
	IN	STA				STA	GAL	FT	FT	FT		
US 34 (Mainline)	622+98.80	623+32.56	PCC	Centerline	12"	0.34		0.0				
US 34 (Mainline)	625+87.44	627+70.00	PCC	Centerline	12"	1.83		0.0				
US 34 (WB Shoulder)	621+00.00	623+32.56	PCC	Left Shoulder	12"	2.33		0.0	10.0			
US 34 (WB Shoulder)	625+87.44	630+40.00	PCC	Left Shoulder	12"	4.53		0.0	10.0			
US 34 (EB Shoulder)	621+00.00	623+32.56	PCC	Right Shoulder	12"	2.33		0.0	10.0			
US 34 (EB Shoulder)	625+87.44	630+40.00	PCC	Right Shoulder	12"	4.53		0.0	10.0			
				Totals		PCC	HMA	Fog Seal				
				HMA Shoulders			0.00	0.0				
				PCC Shoulders		13.70						
				PCC or HMA Shoulders		0.00	0.00	0.0				
				HMA Centerlines			0.00					
				PCC Centerlines		2.16						
				PCC or HMA Centerlines		0.00	0.00					

108-28 08-01-08					
TEMPORARY TRAFFIC SIGNALS					
No.	Location Station	Type			Remarks
		One Lane Traffic	Haul Road	Intersection	
1	620+40.00	X			
1	630+30.00	X			

110-7A 04-17-12					
REMOVAL OF STEEL BEAM GUARDRAIL					
① Lane(s) to which the installation is adjacent.					
② Includes length of End Terminals and End Anchors.					
No.	① Direction of Traffic	Location			Removal of Guardrail ②
		Station to Station		Side	
					LF
1	EB	623+50.00	624+31.90	LT	81.9
2	EB	624+87.75	625+70.00	LT	82.3
3	WB	624+88.10	625+70.10	RT	82.0
4	WB	623+50.50	624+32.60	RT	82.1
			Total(s):		328.3

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY6 - Place on the same side of the roadway to match existing markings near the project.

**NPY6 - For estimating purposes only. No Passing Zone Lines will be located in the field.

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

SLW2: Stop Line (White) @ 4.00

ELW6: Edge Line Right (White) @ 1.00

NPY6: No Passing Zone Line (Yellow) @ 1.25

Location				Length by Line Type (Unfactored)																Remarks
Road ID	Station to Station	Dir. of Travel	Marking Type	Side			SLW2	ELW6	NPY6											
				L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
Stage 0																				
US34	619+40.00	631+30.00	BOTH	PAVEMENT MARKINGS REMOVED	X			11.90												Remove Existing
US34	619+40.00	631+30.00	BOTH	PAVEMENT MARKINGS REMOVED		X		11.90												Remove Existing
US34	619+40.00	631+30.00	BOTH	PAVEMENT MARKINGS REMOVED		X			11.90											Remove Existing
US34	619+40.00		EB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		X	0.12													E Stop Bar
US34	631+30.00		WB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X		0.12													W Stop Bar
Stage 1																				
US34	619+40.00	631+30.00	BOTH	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS		X		11.90												N Temp. Lane
US34	621+00.00	630+20.00	BOTH	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS		X		9.20												S Temp. Lane
Stage 2																				
US34	619+40.00	631+30.00	BOTH	REMOVAL OF REMOVABLE TAPE		X		11.90												Remove Stg1 Lane
US34	621+00.00	630+20.00	BOTH	REMOVAL OF REMOVABLE TAPE		X		9.20												Remove Stg1 Lane
US34	619+40.00	631+30.00	BOTH	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	x			11.90												N. Temp Lane
US34	621+00.00	630+20.00	BOTH	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	x			9.20												S. Temp Lane
Final																				
US34	619+40.00	631+30.00	BOTH	REMOVAL OF REMOVABLE TAPE	x			11.90												Remove Stg2 Lane
US34	621+00.00	630+20.00	BOTH	REMOVAL OF REMOVABLE TAPE	x			9.20												Remove Stg2 Lane
US34	619+40.00		EB	PAVEMENT MARKINGS REMOVED		x	0.12													Remove W Stop Bar
US34	631+30.00		WB	PAVEMENT MARKINGS REMOVED	x		0.12													Remove E Stop Bar
US34	619+40.00	631+30.00	BOTH	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	x			11.90												New Markings
US34	619+40.00	631+30.00	BOTH	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		x		11.90												New Markings
US34	619+40.00	631+30.00	BOTH	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		x			11.90											No Pass Zone
US34	623+32.56	625+87.44	BOTH	GROOVES CUT FOR PAVEMENT MARKINGS		x			2.55											Bridge Grooving
US34	619+40.00	631+30.00	EB	GROOVES CUT FOR PAVEMENT MARKINGS		x		11.90												
US34	619+40.00	631+30.00	WB	GROOVES CUT FOR PAVEMENT MARKINGS	x			11.90												
				Factored Total: PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			0.96	23.80	14.88	-	-	-	-	-	-	-	-	-	-	
				Factored Total: REMOVAL OF REMOVABLE TAPE			-	42.20	-	-	-	-	-	-	-	-	-	-	-	
				Factored Total: WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS			-	42.20	-	-	-	-	-	-	-	-	-	-	-	
				Factored Total: PAVEMENT MARKINGS REMOVED			0.96	23.80	14.88	-	-	-	-	-	-	-	-	-	-	
				Factored Total: GROOVES CUT FOR PAVEMENT MARKINGS			-	23.80	3.19	-	-	-	-	-	-	-	-	-	-	
				Bid Quantity: 2527-9263209 - PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED						39.64										
				Bid Quantity: 2527-9263231 - WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS						42.20										
				Bid Quantity: 2527-9263181 - PAVEMENT MARKINGS REMOVED						39.64										
				Bid Quantity: 2527-9270112 - GROOVES CUT FOR PAVEMENT MARKINGS						26.99										

100-28
10-19-10

LONGITUDINAL GROOVING

Location	Total	Remarks
	SY	
624+60.00	304.9	West Approach
624+60.00	510.2	Bridge FHWA No. 013331
624+60.00	304.9	East Approach
Total(s):	1119.9	

SURVEY SYMBOLS

	Interstate Highway Symbol		Septic Tank
	U.S. Highway Symbol		Cistern
	Iowa Highway Symbol		L.P. Gas Tank (No Footing)
	County Road Highway Symbol		Underground Storage Tank
	Evergreen Tree		Latrine
	Deciduous Tree		Satellite TV Dish
	Fruit Tree		Water Hook Up
	Shrub (Bushes)		Radio Tower
	Timber		Tower Anchor
	Hedge		Guardrail (Beam or Cable)
	Stump		Guard Post (one or two)
	Swamp		Guard Post (over two)
	Rock Outcrop		Filler Pipe
	Broken Concrete		Gas Valve
	Revetment (Rip Rap)		Water Valve
	Cemetery		Speed Limit Sign
	Grave		Mile Marker Post
	Cave		Sign
	Sink Hole		Traffic Signal Control Box
	Board Fence		Rail Road Signal Control Box
	Chain Link or Security Fence		Telephone Switch Box
	Wire Fence		Electric Box
	Terrace		
	Earth Dam or Dike (Existing)		
	Tile Outlet		
	Edge of Water		
	Existing Drainage		
	Right of Way Rail or Lot Corner		
	Concrete Monument		
	Well		
	Windmill		
	Beehive Intake		
	Existing Intake		
	Existing Utility Access (Manhole)		
	Fire Hydrant		
	Water Hydrant (Rural)		

UTILITY LEGEND

	F01D AREON - Quality D Jeff Klocko jeff.klocko@areon.com
	F02D Windstream - Quality D Dan Hogan (563) 920-2428 Dan.Hogan@windstream.com
	F03D ICN - Quality D David Augspurger (515) 229-2013 david.augspurger@icn.state.ia.us
	WL1D SIRWA - Quality D Chad Cass (641) 344-8093 ccass@sirwa.org

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	Transparency
Pink, Dark	(13)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(10)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

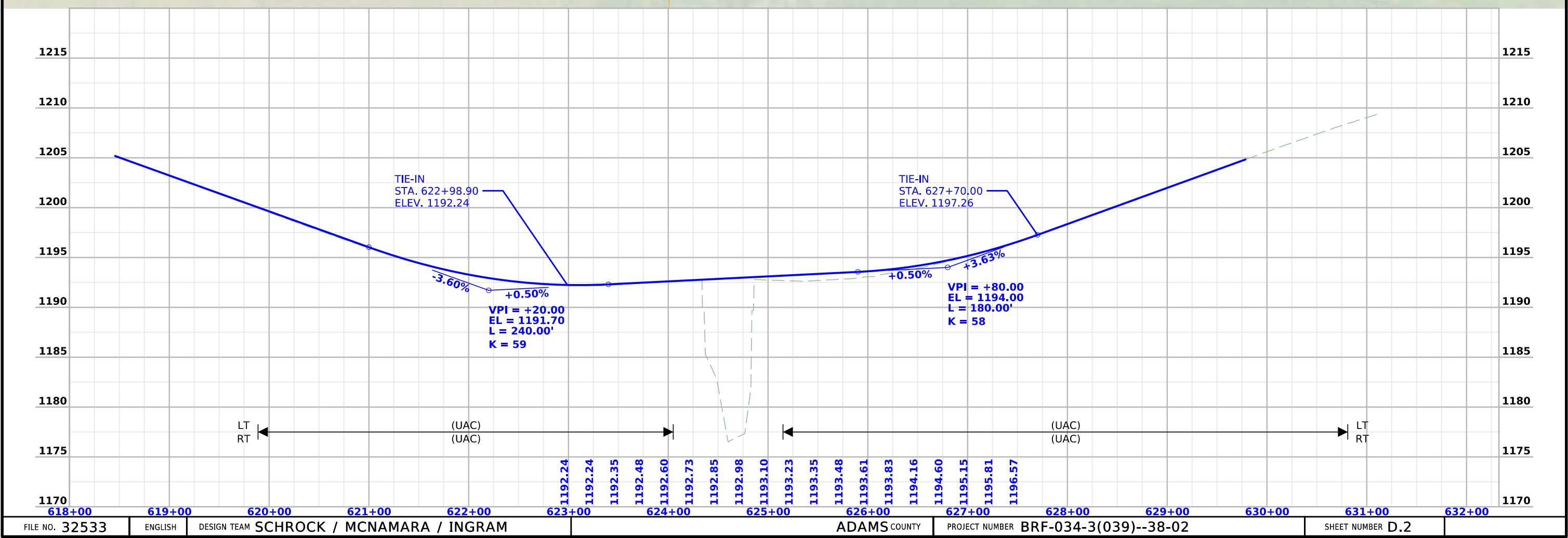
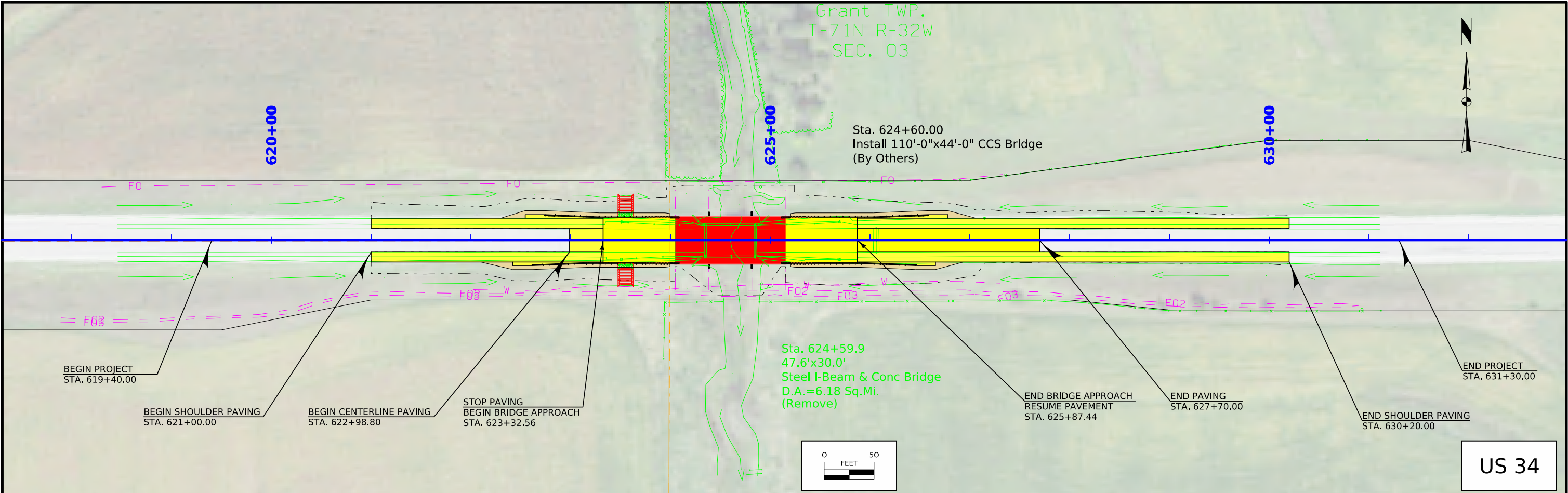
	Reference Point		Survey Line
	Station		Section Corner
	Ground Line Intercept		Saw Cut
	Guardrail		Trench Drain
	HighTension Cable Guardrail		Sheet Pile
	Pavement Removal		Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

	Proposed Right-of-Way Symbol
	Proposed Right-of-Way Line
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary) Symbol
	Easement (Temporary) Line
	Easement
	C/A Access Control
	Property Line Symbol
	Property Line

PLAN AND PROFILE
LEGEND AND SYMBOL
INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)



Survey Information

SURVEY INDEX

Adams County
BRF-034-3(39)--38-02
West Platte River 2.3 mi W of W Jct. IA 25
PIN: 22-02-034-010
Type of Work: Bridge Unspecified
Project Directory: 0203401022

Survey Personnel

Paul Harry – Survey Party Chief
Bob Fredrickson – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 09/11/2023
End Date 09/28/2023

General Information

This survey is for US Hwy 34 bridge over W Platte River 2.3 miles west of west junction IA 25. This project is a Full Field DTM survey.

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

Project Control

Coordinates were determined for primary project control points by conducting concurrent six-hour static observations. Post processing is constrained to nearby Iowa Real Time Network reference stations. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 12
(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

The horizontal alignment was provided by District 4 ROW office.

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 12 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (laRTN 2019 Adjustment)
la. Regional Coordinate System Zone 12 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code-Description
02VANILLA AVE	6228751.08	22290504.25	1259.97	CP SET FENO MON IN WESTERLY ROW COUNTY ROAD VANILLA AVE 1.0 MILES NORTH OF HWY 34
02UNION AVE	6220325.39	22285244.78	1255.83	CP SET FENO MON IN EASTERLY ROW COUNTY ROAD UNION AVE 0.6 MILES SOUTH OF HWY 34
20340740	6223537.15	22289916.04	1212.01	CP FND IDOT CONC REF MON W 1/2IN RBR IN GOOD CONDITION
STRING	6223623.73	22284996.8	1271.21	CP FND NGS 2ND ORDER HORIZONTAL AZIMUTH MARK AS DESCRIBED

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eingram

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ALIGNMENT COORDINATES																		101-16 10-20-09	
Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS		End Curve			End Spiral			
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	ML034	604+14.16	6223646.69	22287238.56															
2	ML034	631+21.88	6223605.91	22289945.98															
2	ML034	635+35.74	6223599.68	22290359.78															

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Through traffic on US 34 shall be maintained at all times.

Utilize single lane closure with temporary signals for staged bridge and pavement construction. Refer to Staging Notes and Staging Detail sheets for additional details.

108-26A
08-01-08

STAGING NOTES

Stage 0:
Traffic: Single lane EB closure with signals, TC-216 Modified (signal timing and distances).
Construction: Widen EB lane with shoulder strengthening/detour pavement.

Stage 1:
Traffic: Single lane WB closure with signals, TC-217 Modified (signal timing and distances)
Construction: WB half of bridge approach, mainline pavement, and guardrail.

Stage 2:
Traffic: Single lane EB closure with TBR, TC-217 Modified (signal timing and distances)
Construction: EB half of bridge approach, mainline pavement, and guardrail.

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None	

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
US 34	WB/EB	Adams	US-34 Bridge over Metz Creek	Bridge	Traffic Control Device	FHWA 13331	Horizontal	N/A	16'	NA	N/A	(3)
US 34	WB/EB	Adams	US-34 Bridge over Metz Creek	Bridge	Temporary Signal	FHWA 13331	Vertical	N/A	15'	14'	N/A	(2,3)
US 34	WB/EB	Adams	US-34 Bridge over Metz Creek	Bridge	Barrier	FHWA 13331	Horizontal	N/A	14'	13'	N/A	(4)
US 34	WB/EB	Adams	US-34 Bridge over Metz Creek	Bridge	Temporary Signal	FHWA 13331	Vertical	N/A	15'	14'	N/A	(2,4)
US 34	WB/EB	Adams	US-34 Bridge over Metz Creek	Bridge	Barrier	FHWA 13331	Horizontal	N/A	12'	11'	N/A	(5)
US 34	WB/EB	Adams	US-34 Bridge over Metz Creek	Bridge	Temporary Signal	FHWA 13331	Vertical	N/A	15'	14'	N/A	(2,5)
NOTES: (1): Restriction is during Bridge Approach Reconstruction. (2): Vertical Height restriction of Temporary Traffic Signals shall follow clearance requirements in Article 2528.03.G.2.a.3)a) and 2528.03.G.2.a.3)d) of the Standard Specifications. (3): Stage 0 - Traffic Control Device (Drum) (4): Stage 1 (3): Stage 2												

FILE NO. 32533

ENGLISH

DESIGN TEAM SCHROCK\MCNAMARA\INGRAM

ADAMS COUNTY

PROJECT NUMBER BRF-034-3(039)--38-02

SHEET NUMBER J.1

7/17/2026

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CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS		
SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
LINEWORK	Design Color No.		
Green	(2)	Existing Topographic Features and Labels	
Magenta	(5)	Pavement Marking Call Outs	
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation	
Yellow	(4)	Pavement Markings, Yellow	
Off White	(254)	Pavement Markings, White	
Violet	(15)	Temporary barrier rail, Unpinned	
Flush Orange	(228)	Temporary barrier rail, Pinned	

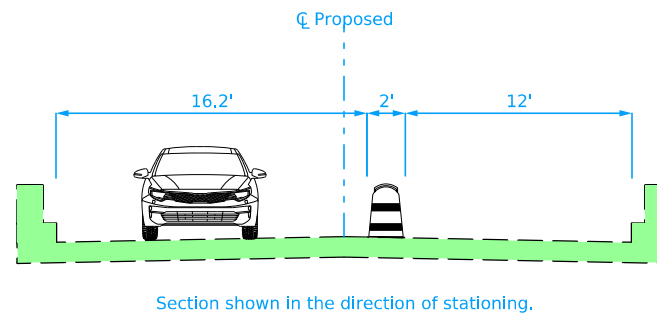
SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Orange	(6)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Pink, Dark	(13)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Cyan	(7)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification

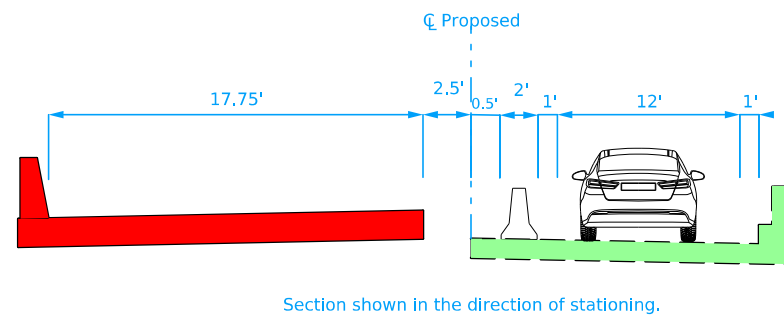
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET

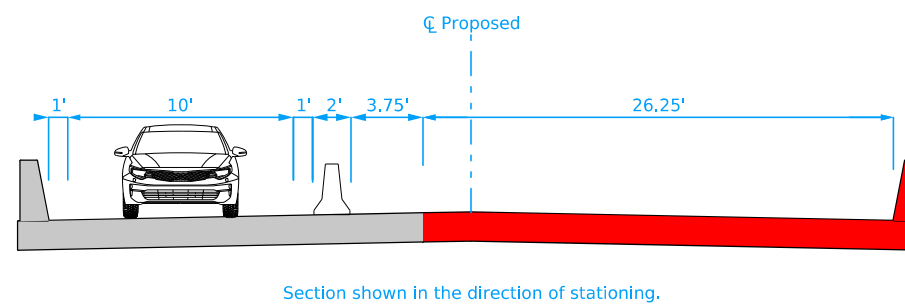
(COVERS SHEET SERIES J)



US 34 Stage 0
EB Shoulder Strengthening



US 34 Stage 1
WB Bridge Construction
and Pavement



US 34 Stage 2
EB Bridge Construction
and Pavement

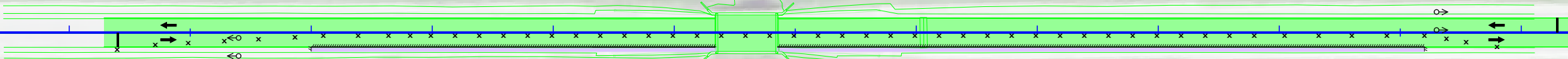
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T-71N R-32W
SEC. 03



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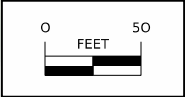
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Notes:
Refer to Standard Road Plan TC-216
for additional details.

US34 Stage 0
EB Shoulder Strengthening



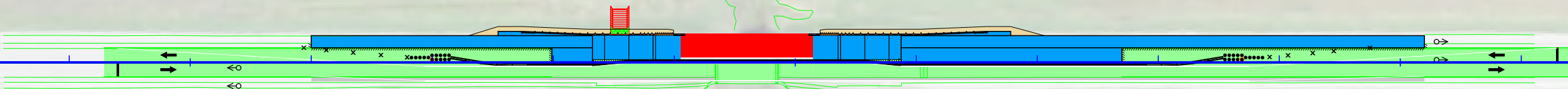
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T-71N R-32W
SEC. 03



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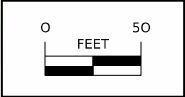
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Notes:
Refer to Standard Road Plan TC-217
for additional details.

US 34 Stage 1
WB Bridge Approach
and Pavement



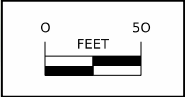
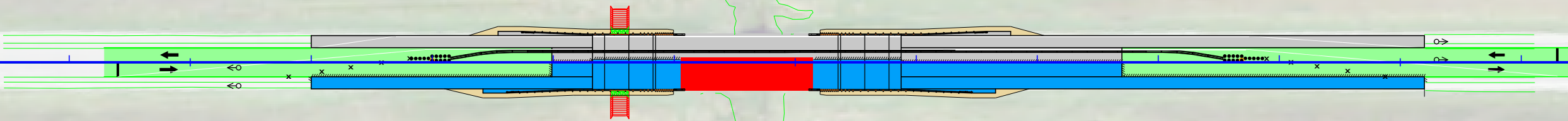
Grant TWP.
T-71N R-32W
SEC. 03



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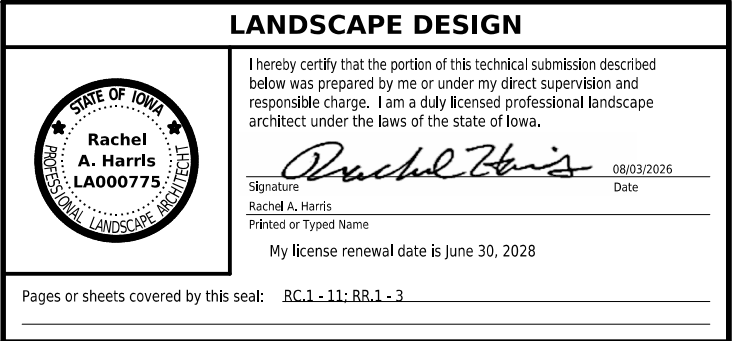
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630+00



Notes:
Refer to Standard Road Plan TC-217
for additional details.

US34 Stage 2
EB Bridge Approach
and Pavement



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed professional landscape architect under the laws of the state of Iowa.

Signature Rachel Harris Date 08/03/2026

Rachel A. Harris
Printed or Typed Name

My license renewal date is June 30, 2028

Pages or sheets covered by this seal: BC.1 - 11; BB.1 - 3

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadside Items : Roadside Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
1	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	36.5	Refer to Tab. 100-22 for locations. Refer to Standard Road Plan EC-103. Prepare seedbed according to Article 2601.03, B, 4, of the Standard Specifications prior to seeding and fertilizing under the slope protection.
2	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	7.3	Estimate for watering Special Ditch Control, Slope Protection Areas, Turf Reinforcement Mat, or Transition Mat is based on a total of four waterings at a rate of 50 gallons maximum per square, per watering. The first watering should be done no later than the day following placement of the materials with 3 additional watering at intervals of 5 to 8 calendar days. The amount of water used should be sufficient to saturate the seedbed to a depth of approximately 2 inches.
3	2601-2643300	MOBILIZATION FOR WATERING	EACH	3	
4	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	200	Refer to Standard Road Plan EC-303.
5	2602-0000212	FLOATING SILT CURTAIN (HANGING)	LF	300	
6	2602-0000240	MAINTENANCE OF FLOATING SILT CURTAIN	LF	150	
7	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	2,200	Refer to Tab 100-19 for locations. Refer to Standard Road Plan EC-204. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control for Ditch Checks" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
8	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	2,200	Refer to Standard Road Plan EC-204. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement. Item may be used in addition to, or as a direct replacement for "Perimeter and Slope Sediment Control Device, 12 in. dia." upon Engineer approval.
9	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	4,400	
10	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
11	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

232_03A 9/28/22 EROSION CONTROL (RURAL SEEDING)
Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications. Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows: Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications. Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications. Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.

232_03C
8/28/24

EROSION CONTROL (NATIVE GRASS SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the Contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEED MIX:

Big bluestem (<i>Andropogon geradii</i>)	6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (<i>Sorghastrum nutans</i>)	6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (<i>Schizachyrium scoparium</i>)	6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (<i>Chamaecrista fasciculata</i>)	4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (<i>Bouteloua curtipendula</i>)	4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (<i>Elymus canadensis</i>)	2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (<i>Panicum virgatum</i>)	1 lbs. PLS/Acre (1.1 kg/ha)
Oats (<i>Avena sativa</i>)	32 lbs./Acre (36.0 kg/ha)

Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debarred or equal to facilitate the application of seed.

Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement. Place seed according to the requirements of Article 4169.02 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed and mulch are incidental to mobilization and will not be paid for separately.

232_11 6/21/23 EROSION CONTROL (STABILIZING CROP SEEDING)
Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications. If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows: Place seed and fertilize according to the requirements of Article 2601.03,C,1 and Section 4169 of the Standard Specifications. Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications. Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are incidental to mobilization and will will not be paid for separately.

281_01 9/28/22 SECTION 404 PERMIT AND CONDITIONS
Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide, Permit No. 3. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

281_03 11/9/23 STORM WATER BEST MANAGEMENT PRACTICES
When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided: Perimeter and Slope Sediment Control Devices, Slope Protection, and Seeding.

282_03 9/28/22 TEMPORARY STREAM CROSSING, CAUSEWAY, OR EQUIPMENT PAD
Standard Road Plan EW-401 is listed in Tabulation 105-4; however, it is included for information purposes only since it is an option. No quantities associated with constructing EW-401 are included in any bid items.

INDEX OF TABULATIONS			111_25 10/20/26
Tabulation	Tabulation Title	Sheet No.	
111_25	INDEX OF TABULATIONS	RC.4	
105_04	STANDARD ROAD PLANS	RC.5	
100_10	FLOATING SILT CURTAINS	RC.6	
100_19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	RC.7	
100_22	ROLLED EROSION CONTROL	RC.8	
100_34	STORMWATER DRAINAGE BASIN	RC.9	
110_12	POLLUTION PREVENTION PLAN	RC.10 - 11	

105_04 10/20/26 STANDARDS The following Standards apply to construction work on this project.		
Number	Date	Title
EC-202	10-21-14	Floating Silt Curtain
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-303	10-19-21	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection

FLOATING SILT CURTAINS

Refer to EC-202

100 10
8/15/22

Station	Hanging (LF)	Containment (LF)	Clean-out (Containment) (LF)	Maintenance of Floating Silt Curtain (LF)	Remarks
624+68.00	150.0			75.0	
624+74.00	150.0			75.0	

Total:300150

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

100_19
10/15/24

Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
621+00.00	623+46.00	Left	Perimeter and Slope	12 inch	250.00	
623+62.00	624+12.00	Left	Perimeter and Slope	12 inch	50.00	
623+94.00	623+94.00	Left	Perimeter and Slope	12 inch	30.00	
621+00.00	623+46.00	Right	Perimeter and Slope	12 inch	250.00	
623+62.00	624+15.00	Right	Perimeter and Slope	12 inch	60.00	
623+98.00	623+98.00	Right	Perimeter and Slope	12 inch	20.00	
625+26.00	625+26.00	Left	Perimeter and Slope	12 inch	30.00	
625+10.00	630+19.00	Left	Perimeter and Slope	12 inch	520.00	
625+09.00	630+19.00	Right	Perimeter and Slope	12 inch	520.00	
625+15.00	625+15.00	Right	Perimeter and Slope	12 inch	30.00	

Total:1760

ROLLED EROSION CONTROL Refer to EC-101, EC-103 and EC-104.										100.22 8/15/22
Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	TRM Type (EC-104)	TRM Quantity (Squares)	Slope Protection (EC-103) (Squares)	Special Ditch Control (EC-101) (Squares)	Remarks
US 34	623+95.00	624+21.00	Left	26.8	11.9			2.4		
US 34	624+00.00	624+36.00	Right	35.1	15.5			3.3		
US 34	625+00.00	625+50.00	Left	50.4	17.8			7.2		
US 34	625+00.00	626+51.00	Right	144.0	17.7			23.6		

Total: 36.5

100 34

11/30/25

STORMWATER DRAINAGE BASIN

Refer to EC Standards and 570s Details.

Basin No.	Station From	Station To	Side	Discharge Station	Discharge Direction	Total Disturbed Area (ACRES)	Disturbed Area with Storage Provided (ACRES)	Disturbed Area without Storage Provided (ACRES)	Best Management Practice	Total Storage Volume Provided (CF)	Total Storage Volume Required (CF)	Storage Volume Met	Remarks
1	621+00.00	624+65.00	Left	624+65.00	E	0.3	0.3				1080.0	No	
2	621+00.00	624+68.00	Right	624+68.00	E	0.3	0.3				1080.0	No	
3	624+65.00	630+19.00	Left	624+65.00	W	0.4	0.4				1440.0	No	
4	624+69.00	630+19.00	Right	624+69.00	W	0.3	0.3				1080.0	No	

110_12 1/13/23 POLLUTION PREVENTION PLAN This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP). This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review. All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP. I. ROLES AND RESPONSIBILITES A. Designer: - Prepares Base PPP included in the project plan. - Prepares Notice of Intent (NOI) submitted to Iowa DNR. - Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required. B. Contractor: - Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP. - Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications. - Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications. - Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231). - Supervises and implements good housekeeping practices according to Paragraph III, C, 2. - Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports. - Complies with training and certification requirements of Section 2602 of the Standard Specifications. - Submits amended PPP site map according to Section 2602 of the Standard Specifications. C. Subcontractors: - Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or perorming work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP. - Implement good housekeeping practices according to Paragraph III, C, 2. D. RCE/Project Engineer: - Is Project Storm Water Manager. - On projects where DOT is the Contracting Authority, is current with erosion control training or certification. - Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance. - Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit. - Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors. - Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements. - Is familiar with the Project PPP and storm water site map. - On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies. - Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements. - Is signature authority on Notice of Discontinuation. - Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231). - Makes information to determine permit compliance available to the DNR upon their request.				110_12 1/13/23 POLLUTION PREVENTION PLAN E. Inspector: - Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project. - Makes information to determine permit compliance available to the DNR upon their request. - Conducts joint required inspections of the site with the contractor/subcontractor. - Completes an inspection report after each inspection. - Is signature authority on storm water inspection reports. II. PROJECT SITE DESCRIPTION A. This Pollution Prevention Plan (PPP) is for a Bridge Replacement-CCS in Adams County. B. This PPP covers approximately 2.70 acres with an estimated 1.30 acres being disturbed. The portion of the PPP covered by this contract has 1.30 acres disturbed. C. The PPP is located in an area of Sharpsburg - Shelby - Adair soil association. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.41. D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets. E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map. F. Runoff from this work will flow into Metz Creek to the Saylings Creek to the Platte River. III. CONTROLS A. The Contractor’s ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented. B. Preserve vegetation in areas not needed for construction. C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications. 1. EROSION AND SEDIMENT CONTROLS a. Stabilization Practices - Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized. - Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have: - Permanently ceased on any portion of the site, or - Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. - Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above. - Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets. - Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips. - Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications. b. Structural Practices - Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas. - Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.					
FILE NO.	32533	ENGLISH	DESIGN TEAM	HARRIS/POHLEN/VAN DUONG	ADAMS COUNTY	PROJECT NUMBER	BRF-034-3(039)--38-02	SHEET NUMBER	RC.10

6/4/2026 2:15:56 PM

u@ehanapehlen@iowadot.us

Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

- b. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
- c. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
- d. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
- e. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
- f. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
- g. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
- h. Concrete Grooving/Grinding Slurry - Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
- i. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
- j. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation on storm water would result in a discharge of pollutants.
- k. Dewatering - Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:

1. Date of the inspection.
2. Summary of the scope of the inspection.
3. Name and qualifications of the personnel making the inspection.
5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
6. Major observations related to the implementation of the PPP.
7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

FILE NO.	32533	ENGLISH	DESIGN TEAM	HARRIS/POHLEN/VAN DUONG
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This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the EIS. The EIS also includes a discussion of the control of surface runoff from the project area. The EIS also includes a discussion of the control of surface runoff from the project area. The EIS also includes a discussion of the control of surface runoff from the project area.

silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
- C. Fieldbook Entries - This contains the inspector's daily diary and bid item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
- E. Signature Authority - Representative authorized to sign various storm water documents.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Nathan J. Pohlen
Print Name

LINE STYLE LEGEND OF LANDSCAPE SHEETS	
LINESTYLE	Design Element
-----	Living Snow Fence Single Row
-----	Living Snow Fence Double Row
-----	Mechanical Edge

CELL LEGEND OF LANDSCAPE SHEETS		
CELL	Design Element	Plant Diameter
	Clearing	
	Proposed Shrub	6 FT
	Proposed Understory Tree	12 FT
	Proposed Conifer Tree	18 FT
	Proposed Overstory Tree	30 FT

PATTERN LEGEND OF LANDSCAPE SHEETS	
	Brush Clearing
	Clearing & Grubbing
	Spray Area

LINE STYLE LEGEND OF EROSION CONTROL SHEETS	
LINESTYLE	Design Element
	Silt Fence
	Perimeter and Slope Sediment Control Device (9")
	Perimeter and Slope Sediment Control Device (12")
	Perimeter and Slope Sediment Control Device (20")
	Open-Throat Curb Intake Sediment Filter
	Concentrated Flow
	Rock Check and Rock Check Dam
	Sheet Flow

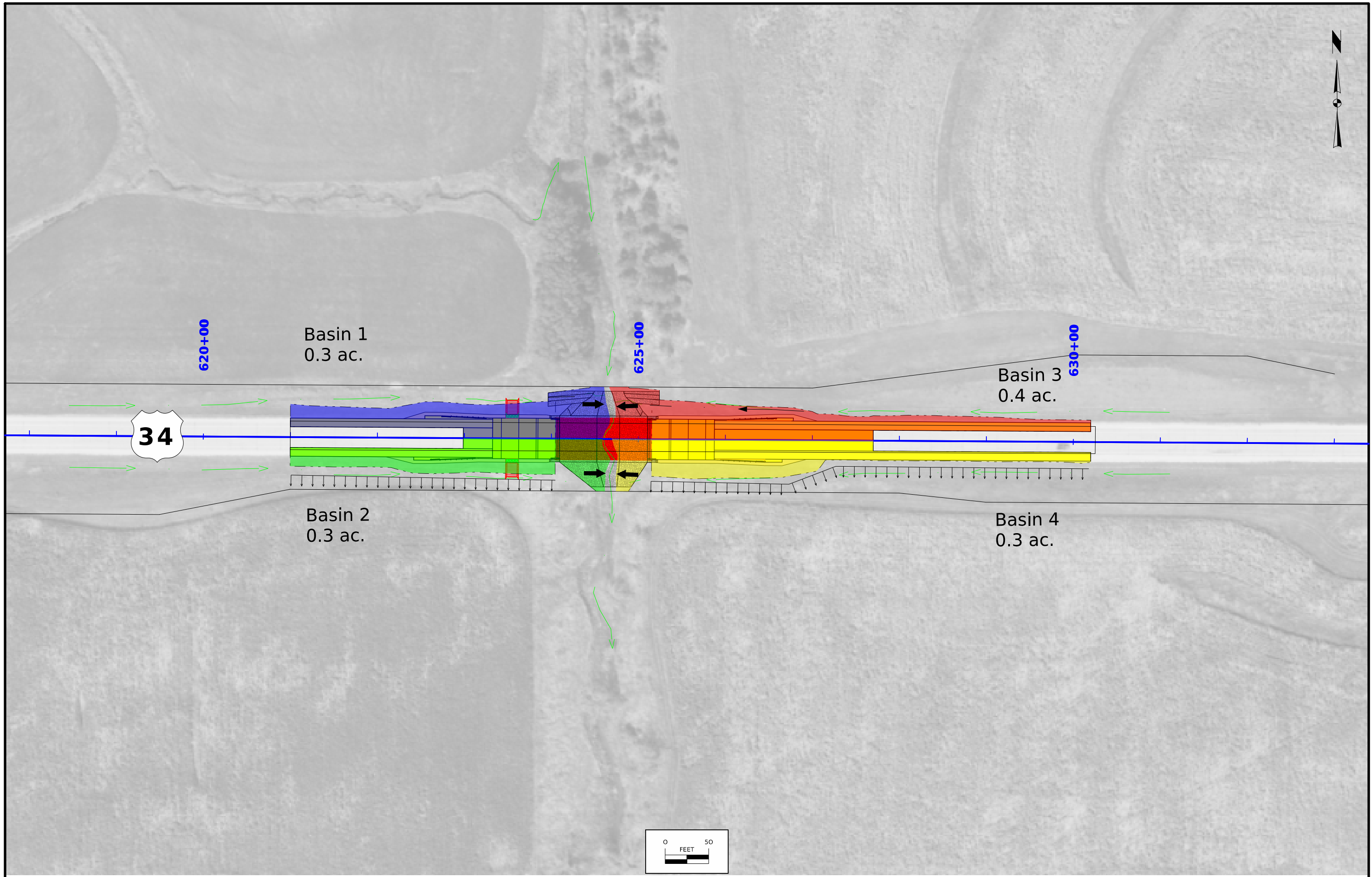
CELL LEGEND OF EROSION CONTROL SHEETS	
CELL	Design Element
	Temporary Sediment Control basin
	Erosion Control for Circular Intake or Manhole Well
	Erosion Control for Rectangular Intake or Manhole Well
	Grate Intake Sediment Filter Bag
	Silt Basin
	Silt Fence Tail
	Stormwater Drainage Basin Discharge Point

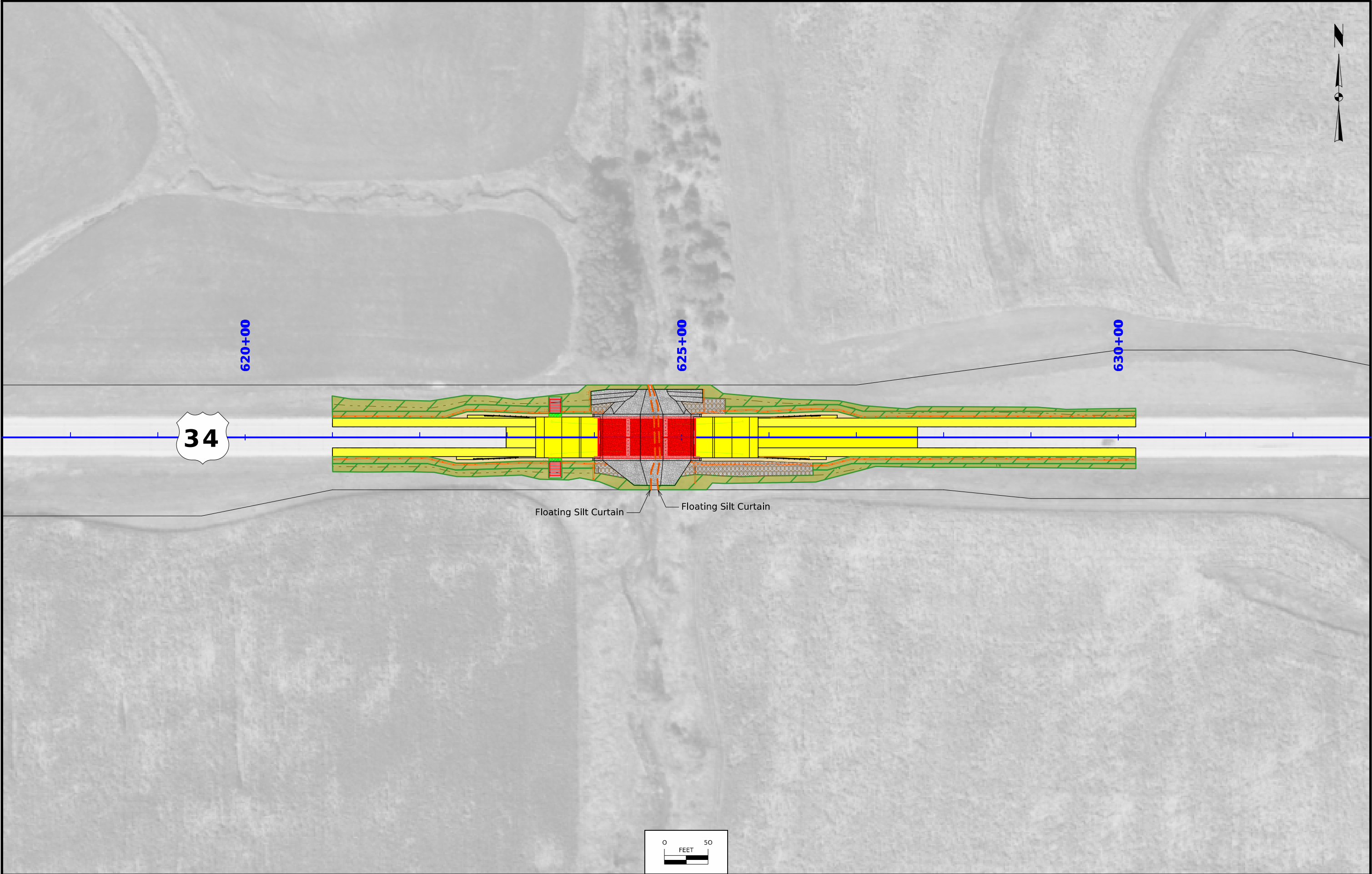
PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS		
LINEWORK	Design Color No.	
Green	(2)	 Existing Topographic Features and Labels
Blue	(1)	 Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	 Existing Utilities
Black	(0)	 Permanent Erosion Control Features
Blaze Orange	(222)	 Temporary Erosion Control Features
SHADING	Design Color No.	Transparency
Citron	(234)	 Mulching, All Types 50%
Light Brown	(238)	 Special Ditch Control, Wood Excelsior Mat 0%
Grass Green	(233)	 8FT Mow Strip 50%
Red	(3)	 Delineates Restricted Areas 0%

PATTERN LEGEND OF EROSION CONTROL SHEETS	
	Seeding and Fertilizing
	Seeding and Fertilizing (Rural)
	Seeding and Fertilizing (Urban)
	Native Grass Seeding
	Salt Tolerant Seeding
	Wetland Grass Seeding
	Wildflower Seeding
	Sodding
	Turf Reinforcement Mat Type 1
	Turf Reinforcement Mat Type 2
	Turf Reinforcement Mat Type 3
	Turf Reinforcement Mat Type 4
	Slope Protection, Wood Excelsior Mat
	Transition Mat
	Rock Features, Permanent
	Rock Features, Temporary

LEGEND AND SYMBOL
INFORMATION SHEET

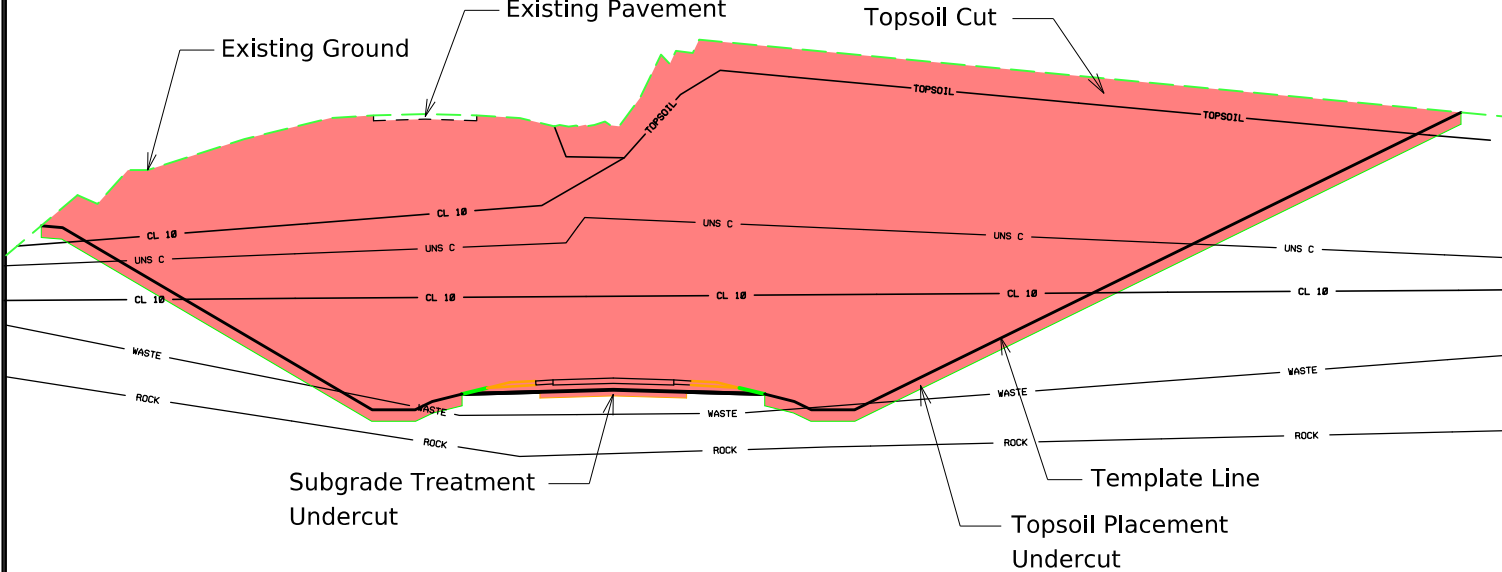
(COVERS SHEET SERIES D & R)





CUT SIDE Total Cut Unadjusted

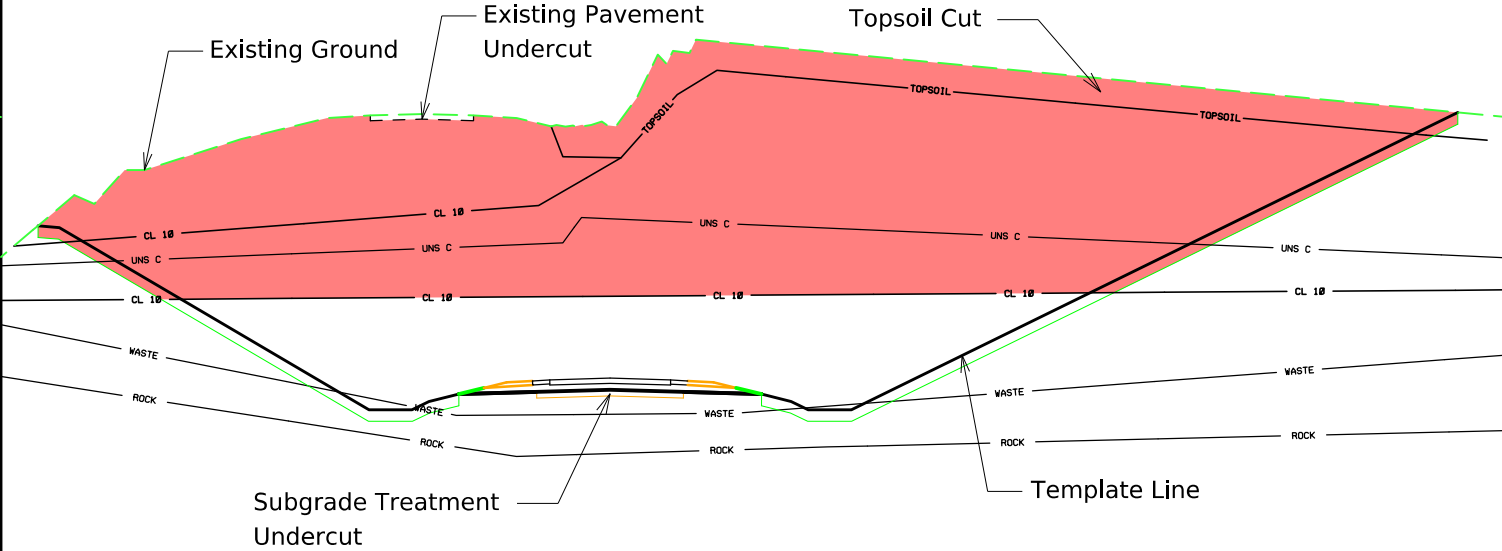
RURAL



Notes:

- 1. "Total Cut Unadjusted" Column includes all cut values in the Station Range based on Typical, Topsoil and Subgrade Treatment needs.
- 2. "Total Cut Unadjusted" does not include and Existing Pavement values inside or outside the cut template as shown on cross sections.
- 3. Tabulated Plowing and Shaping operations are included in the "Total Cut Unadjusted" values.

CUT SIDE Total Cut Adjusted

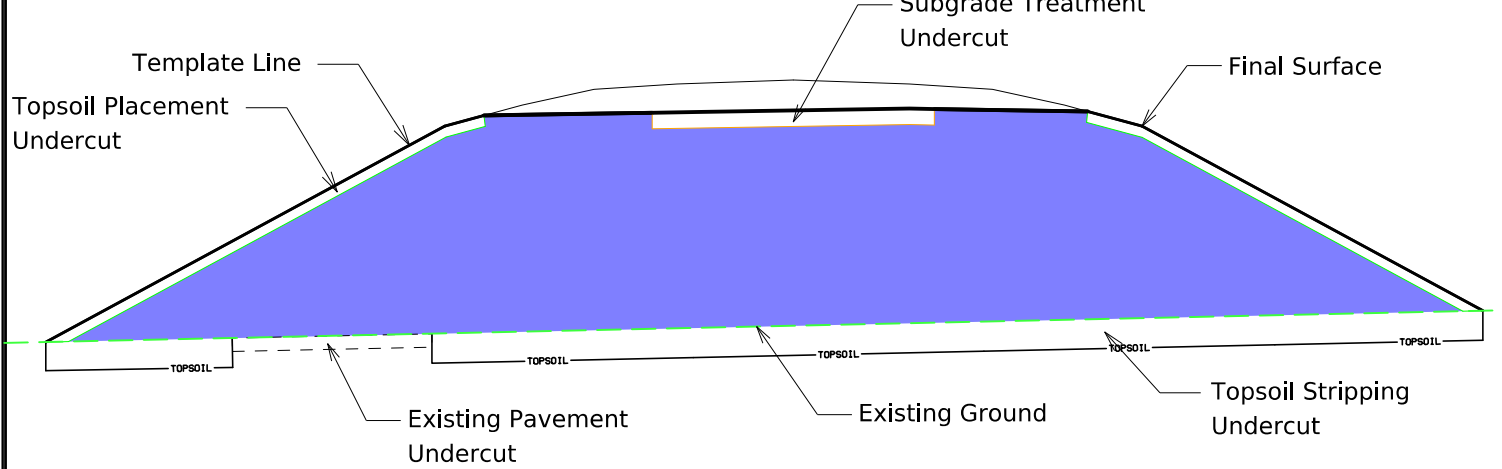


Notes:

- 1. "Total Cut Adjusted" Column includes all cut values usable as Class 10 material.
- 2. "Total Cut Adjusted" does not include and Existing Pavement , Existing Topsoil, or material to be wasted.

FILL SIDE Total Fill Unadjusted

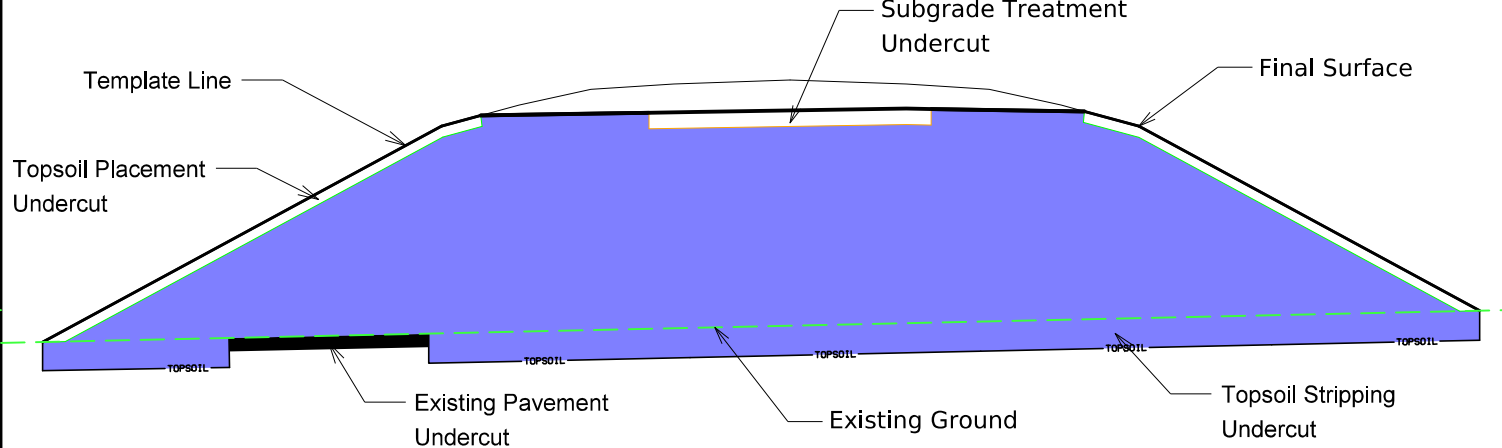
RURAL



Notes:

- 1. "Total Fill Unadjusted" Column includes all Class 10, 12, and 13 fill. This excludes the topsoil, subgrade treatment, subbase, new pavement, and shoulder fill needs in that station range.
- 2. "Total Fill Unadjusted" Column does not include adjustments for additional fill from cuts such as existing pavement removed, plowing and shaping operations, entrances, dikes, or topsoil stripping.

FILL SIDE Total Fill Adjusted

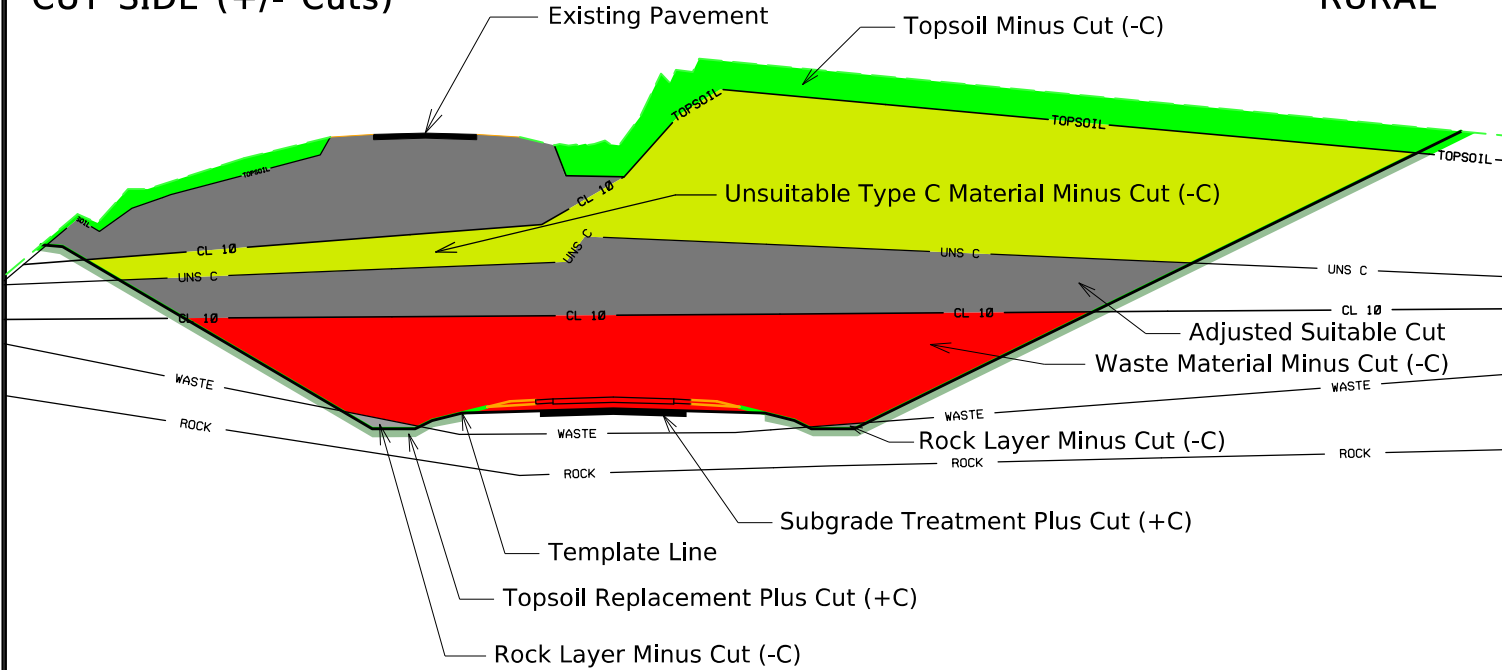


Notes:

- 1. "Total Fill Adjusted" Column includes all Class 10, 12, and 13 fill and adjustments for additional fill from cuts such as existing pavement, plowing and shaping operations, entrances, dikes, and topsoil stripping.
- 2. The available area to place unsuitable materials in the T Sheet tabulation does not include the undercut values from the topsoil stripping, existing pavement, or plowing and shaping

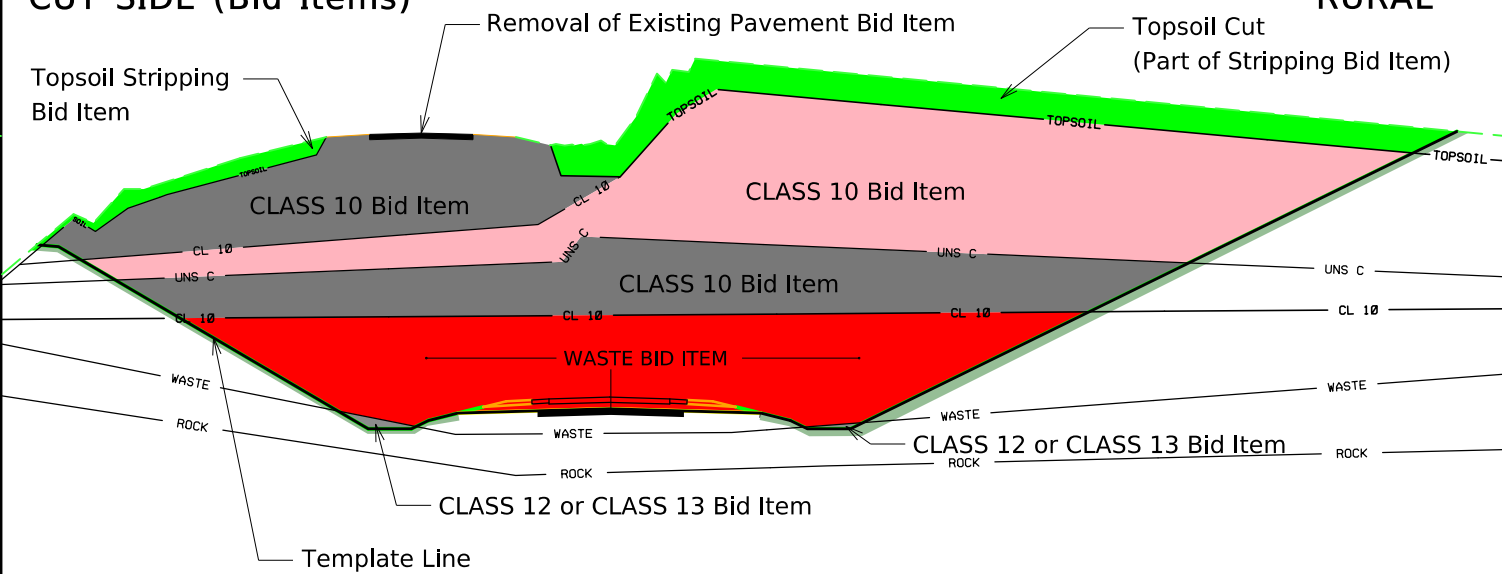
CUT SIDE (+/- Cuts)

RURAL



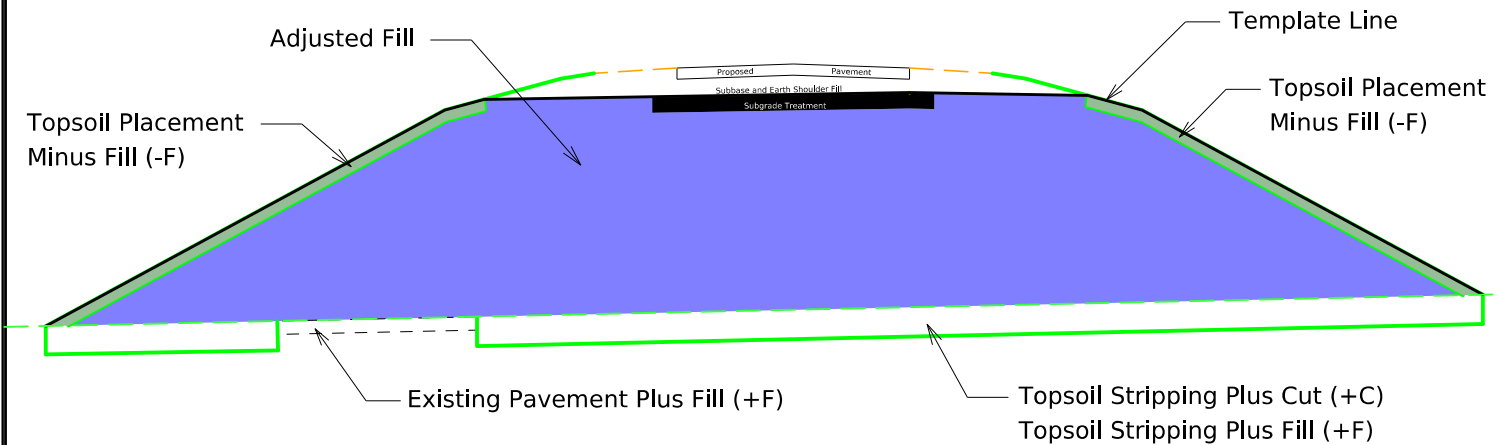
CUT SIDE (Bid Items)

RURAL



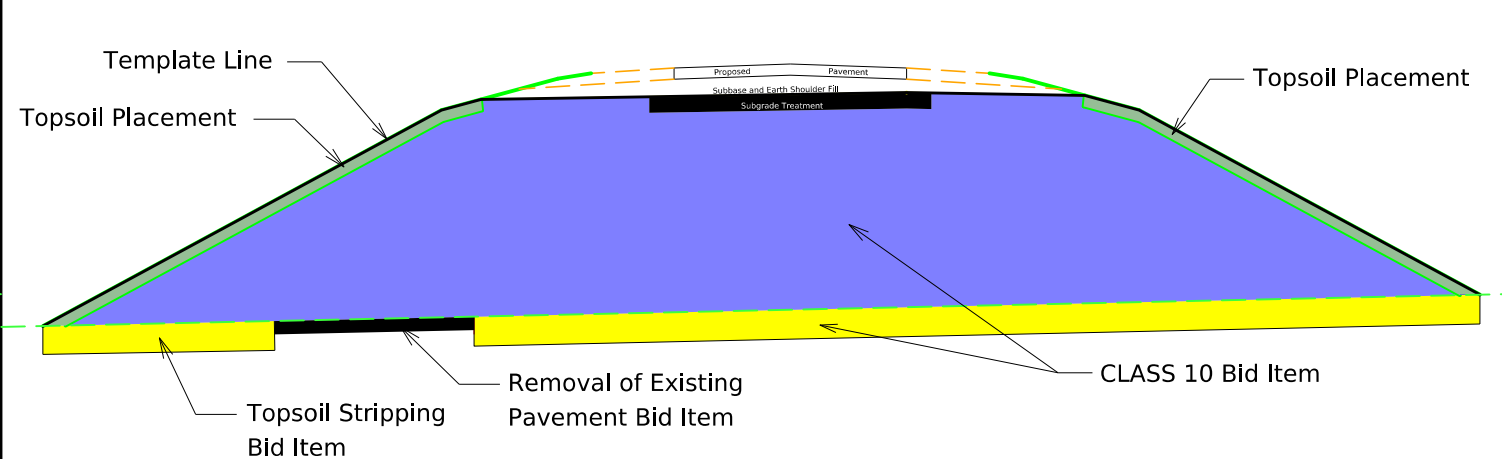
FILL SIDE (+/- Fills)

RURAL



FILL SIDE (Bid Items)

RURAL



- Notes:
1. "Add Quantity +C" columns are additional cut encountered that is not Typical, Topsoil, or Subgrade Treatment Based. (Entrance, Dike, Etc.)
 2. "-C" columns are either soil types or Class 10, 12, or 13 designated material that is encountered in the cut station range that is paid for by other bid items.
 3. The "(SoilType) Cut" columns are soil types encountered in the cut that are paid by either Class 10, 12, or 13.
 4. The "Adjusted Clas (10,12 or 13)" columns are the sum of all various soil types encountered in that station range, that are paid by Class 10, 12, or 13 bid items.
 5. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

- Notes:
1. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

Refer to Standard Road Plans EW-101 and EW-102.

107-28
04-21-15

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut					Fill				Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Pavement Removal Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
ML034 West 621+00.00 621+25.00 621+50.00 621+75.00 622+00.00 622+25.00 622+50.00 622+75.00 623+00.00 623+25.00 623+50.00 623+75.00 624+00.00 624+25.00 624+50.00 624+52.29 ML034 West Totals:	43 43 42 42 44 50 54 86 116 113 113 121 102 49 1 1,020	14 13 14 14 14 14 14 34 53 49 46 46 23 0 0 347	26 25 25 24 26 33 37 35 33 33 35 43 49 34 1 460	3 4 4 4 4 4 4 17 30 31 32 32 31 15 0 214	14 13 14 14 14 14 14 34 53 49 46 46 23 0 0 347	18 16 16 16 21 41 55 42 27 28 38 50 28 0 0 396	18 16 16 15 21 41 55 42 27 28 38 50 28 0 0 396	24 22 20 20 28 53 71 55 35 37 49 65 37 0 0 516	-9 -8 -7 -6 -14 -40 -58 -22 18 12 -3 -19 -14 0 0 -170	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	26 25 25 24 26 33 37 35 33 33 35 43 49 34 1 460	12 11 11 10 10 10 11 9 6 8 10 5 0 0 0 114	17 16 15 15 14 15 15 12 9 11 14 7 0 0 0 160	9 9 9 10 12 18 22 23 24 23 22 36 49 34 1 300							

Refer to Standard Road Plans EW-101 and EW-102.

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04-21-15

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

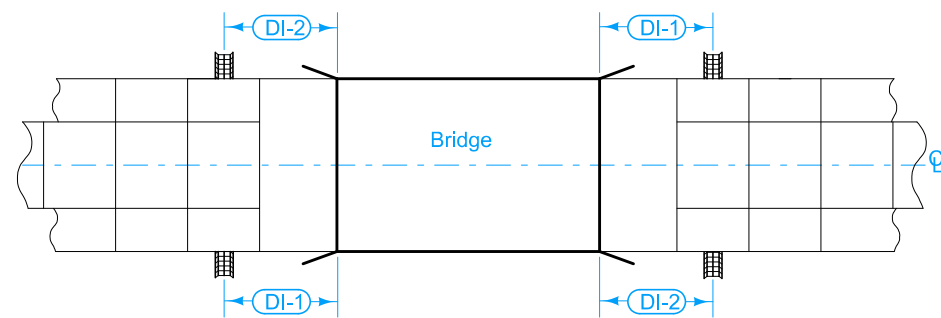
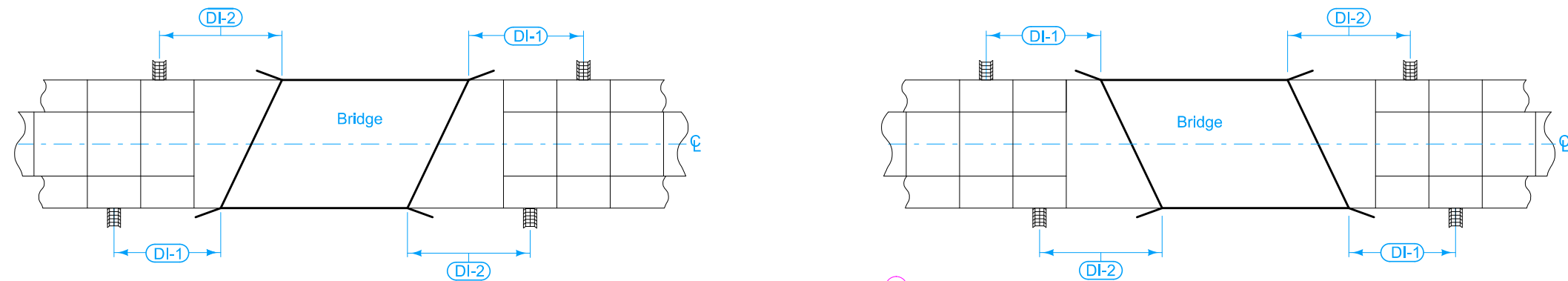
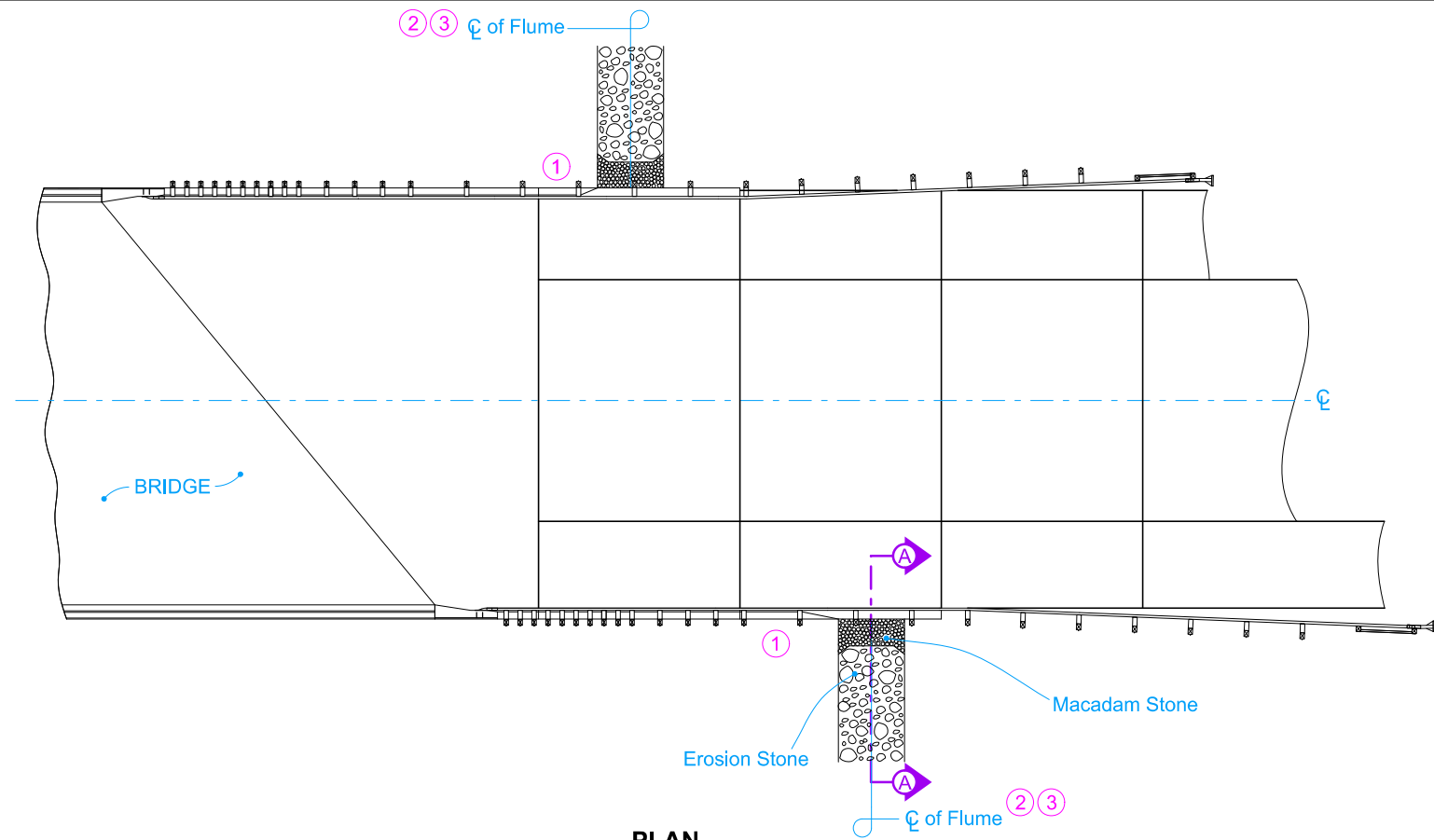
Station	Cut					Fill				Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Pavement Removal Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
ML034 East 624+82.53 625+00.00 625+25.00 625+50.00 625+75.00 626+00.00 626+25.00 626+50.00 626+75.00 627+00.00 627+25.00 627+50.00 627+75.00 628+00.00 628+25.00 628+50.00 628+75.00 629+00.00 629+25.00 629+50.00 629+75.00 630+00.00 630+20.00 ML034 East Totals:	27 86 93 91 93 100 106 110 109 100 92 59 26 26 26 25 25 24 24 23 23 17	0 11 21 20 25 34 41 48 53 55 56 36 16 16 16 16 16 16 16 16 16 13	16 44 41 39 37 37 35 33 27 15 7 6 6 6 6 5 5 3 3 3 1	11 31 32 32 31 30 30 30 30 29 29 17 4 4 4 4 4 4 4 4 4 3	0 11 21 20 25 34 41 48 53 55 56 36 16 16 16 16 16 16 16 16 16 13	0 41 77 68 56 47 42 35 21 7 2 3 5 5 5 4 4 4 4 3 3 1	0 41 77 68 56 47 42 35 21 7 2 3 5 5 5 4 4 4 4 3 3 1	0 53 100 88 73 61 55 46 27 9 2 4 6 6 6 6 6 5 5 4 2	0 -42 -80 -68 -49 -28 -13 2 25 46 54 33 10 10 10 10 10 11 12 12 11	0 0	0 0	16 44 41 39 37 37 35 33 27 15 7 6 6 6 6 5 5 3 4 3 3 1	0 7 14 14 12 9 8 6 5 3 1 2 2 2 2 1 0 0 0 0	0 10 20 20 17 13 11 9 7 4 1 2 3 3 2 2 1 0 0 0 0	16 34 21 19 21 23 24 24 20 11 6 4 3 3 3 3 3 3 3 2 1							

Refer to Standard Road Plans EW-101 and EW-102.

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04-21-15

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

[illegible]



Price bid for "Bridge End Drain, DR-402" is full compensation for furnishing, installing, and constructing the Bridge End Drain as shown.

- ① Continue 4 inch sloped curb to edge of flume per section B-B. Refer to [BR-201](#), [BR-202](#), [BR-203](#), [BR-204](#), or [BR-205](#) for details of 4 inch curb.
- ② DI-1 and DI-2 distances measured from center of Bolt Pattern. Refer to BA-202.
- ③ Extend rock flume to toe of backslope. If no backslope exists, extend rock flume a minimum of 4 feet beyond the toe of foreslope.

Possible Contract Items:
Bridge End Drain, DR-402

Incidental to Bridge End Drain:
Macadam Stone Base Material
Erosion Stone
Engineering Fabric
Excavation, hauling, and disposing of material

Possible Tabulation:
[104-8A](#)

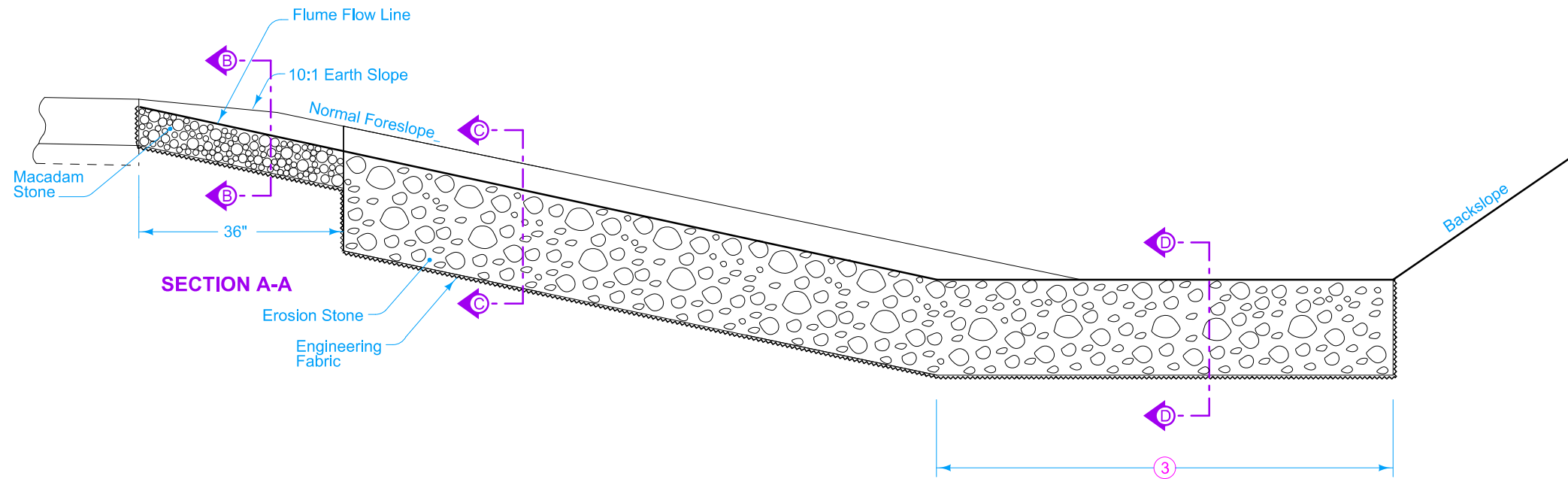
MODIFIED

MODIFICATIONS: Changed overall width of sections B-B, C-C, and D-D from 7'-6" to 15'-0".

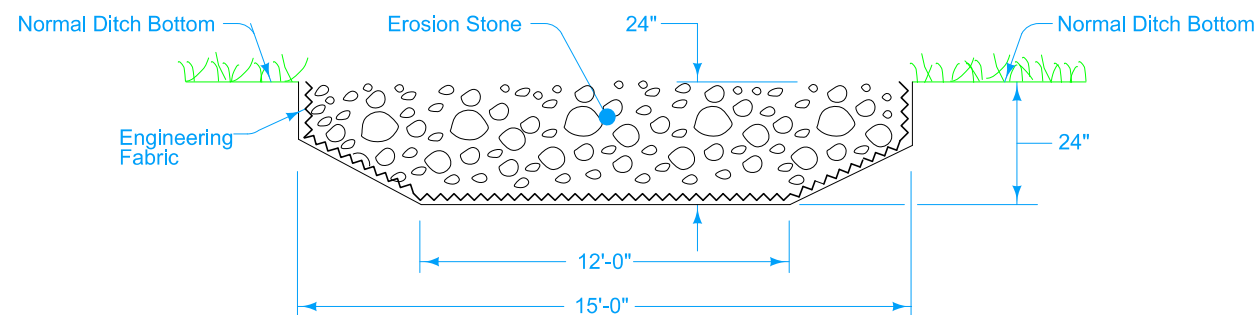
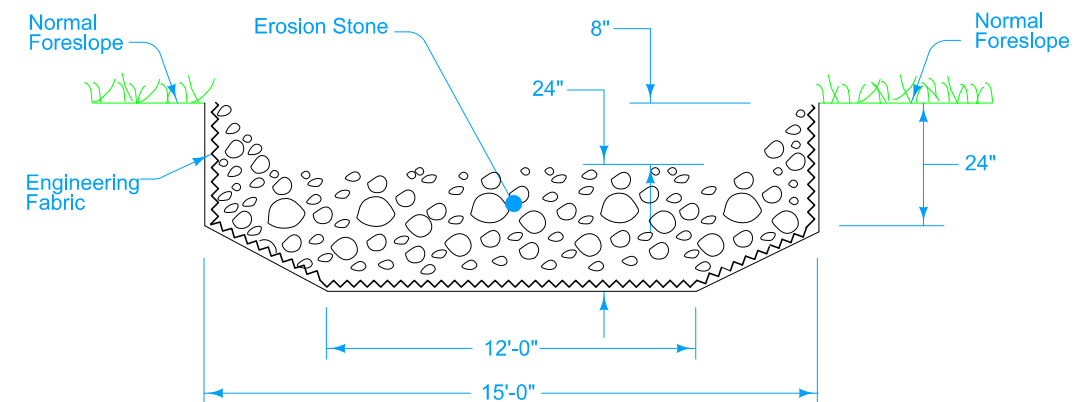
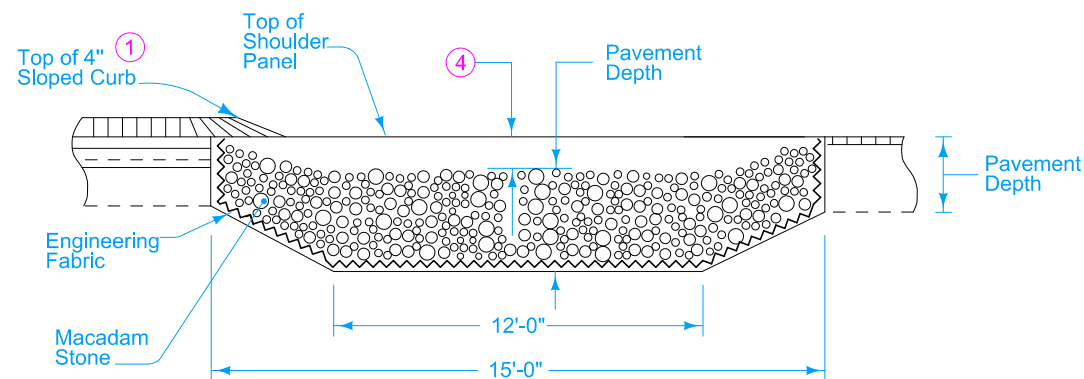
ROCK FLUME FOR BRIDGE END DRAIN

DR-402

SHEET 1 of 2



- ① Continue 4 inch sloped curb to edge of flume per section B-B. Refer to [BR-201](#), [BR-202](#), [BR-203](#), [BR-204](#), or [BR-205](#) for details of 4 inch curb.
- ③ Extend flume to toe of backlope. If no backslope exists, extend rock flume a minimum of 4 feet beyond the toe of foreslope.
- ④ Transitions from 2 inches at edge of pavement to 8 inches within 3 feet.
- ⑤ Transition the flume flow line depth from 8 inches at the toe of slope to 0 inches with an approximate transition rate of 2 inches per 1 foot horizontal.



MODIFIED

MODIFICATIONS: Changed overall width of sections B-B, C-C, and D-D from 7'-6" to 15'-0".

**ROCK FLUME FOR
BRIDGE END DRAIN**

DR-402

SHEET 2 of 2

CROSS SECTION VIEW COLOR LEGEND			
Design Color No.	Feature	Design Color No.	Feature
Aggregate		Grading	
(64)	Choke Stone	(8)	Behind Curb Cut
(42)	Engineering Fabric	(6)	Granular
(8)	Flooded Backfill	(13)	Granular Back Fill
(92)	Macadam Stone	(48)	Rock Undercut
(20)	Modified	(8)	Shoulder Earth Fill
(12)	Plowing Shaping	(2)	Side Slopes
(14)	Porous Backfill	(226)	Side Slopes Dressing
(8)	Revetment Class A	Substrata	
(6)	Revetment Class B	(128)	Boulder
(62)	Revetment Class C	(209)	Boulder Removed
(188)	Revetment Class D	(48)	Broken Weathered
(28)	Revetment Class E	(210)	Broken Weathered Removed
(12)	Shoulder Special Backfill	(3)	Core Out
(12)	Special Backfill	(115)	Core Out Remove Only
(20)	Subbase	(195)	Core Out Remove and Replace
(20)	Subbase Lower	(203)	Existing Pavement
(20)	Subbase Upper	(184)	Existing Pavement Remove Only
(118)	Subgrade Treatment	(200)	Existing Pavement Remove and Replace
Asphalt		(6)	Loam
(207)	HMA Base Course	(211)	Loam Removed
(207)	HMA Interim Course	(80)	Rock
(207)	HMA Surface Course	(212)	Rock Removed
Bridge		(4)	Select Sand
(0)	Bridge	(214)	Select Sand Removed
Concrete		(3)	Shale
(0)	Barrier Concrete	(215)	Shale Removed
(0)	Barrier Concrete Footing	(10)	Topsoil
(0)	Curb Gutter	(2)	Topsoil Remove Only
(48)	Flowable Mortar	(4)	Topsoil Remove and Replace
(0)	Median Concrete	Unsuitable / Waste	
(0)	PCC Pavement	(3)	Unsuitable Type A
(0)	Sidewalk	(216)	Unsuitable Type A Removed
Existing		(13)	Unsuitable Type B
(0)	Existing Pavement	(217)	Unsuitable Type B Removed
Shoulder		(11)	Unsuitable Type C
(209)	Shoulder HMA	(218)	Unsuitable Type C Removed
(0)	Shoulder PCC	(3)	Waste
(6)	Shoulder Granular	(219)	Waste Removed
Structural			
(112)	Noise Wall		
(112)	Noise Wall Footing		
(112)	Retaining Wall Back		
(112)	Retaining Wall Back Excavate		
(112)	Retaining Wall Face		
(112)	Retaining Wall Front Excavate		
(112)	Retaining Wall Front Footing		
(112)	Retaining Wall MSE Gutter		
(112)	Retaining Wall Reinforced Earth		

NOTES:

Text

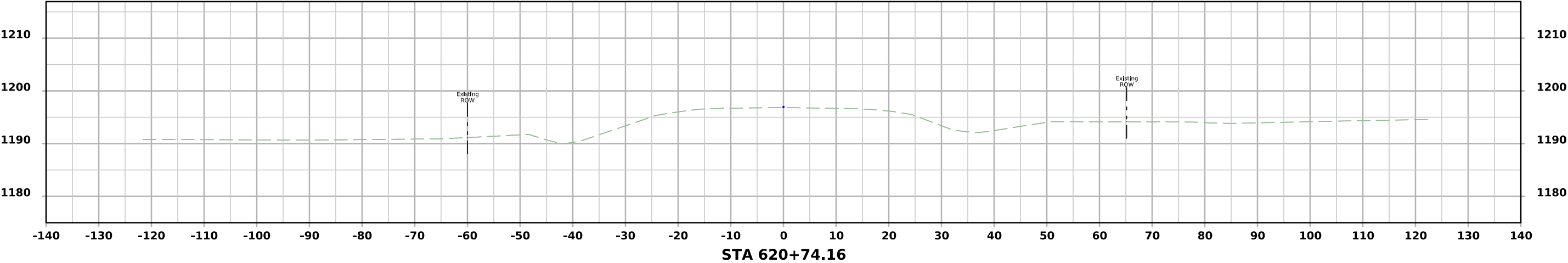
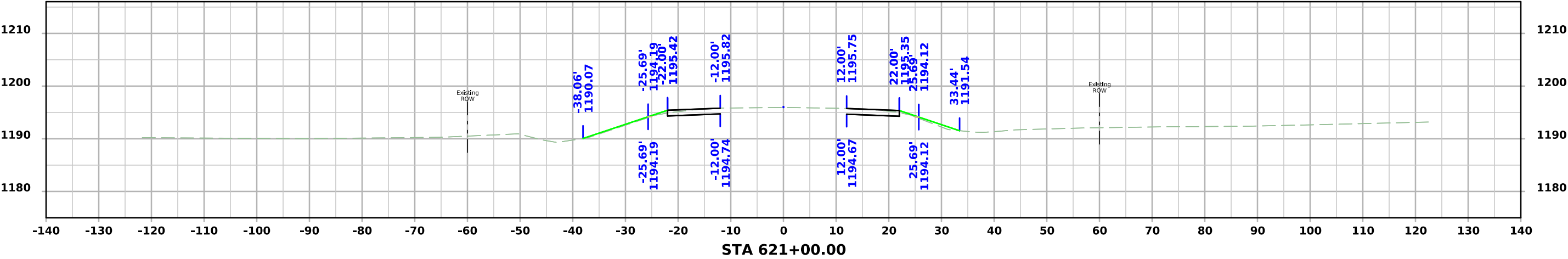
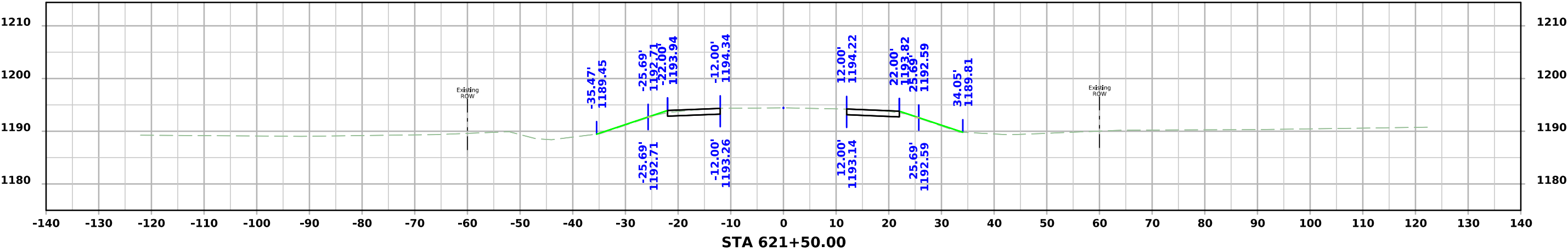
NOTES:

Text

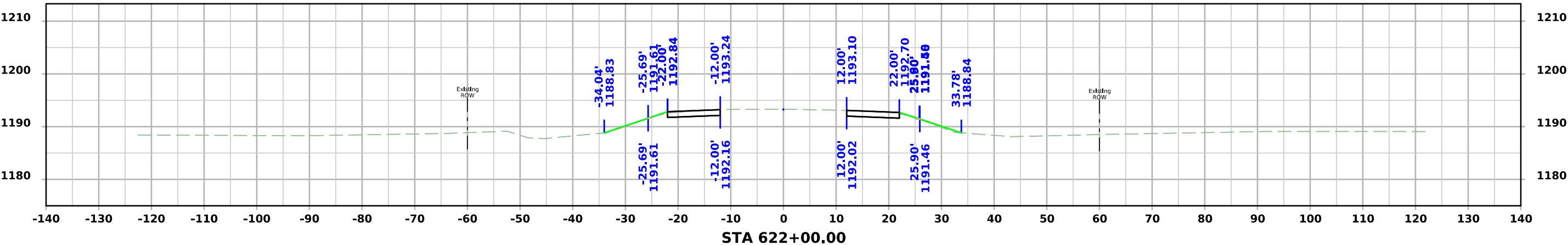
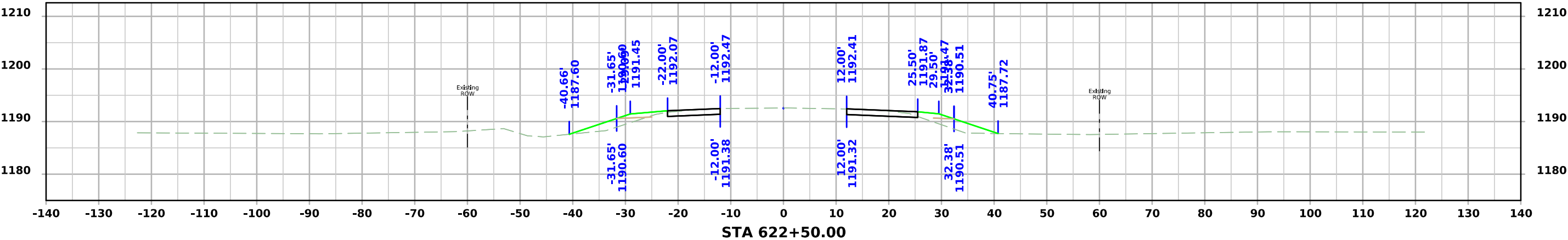
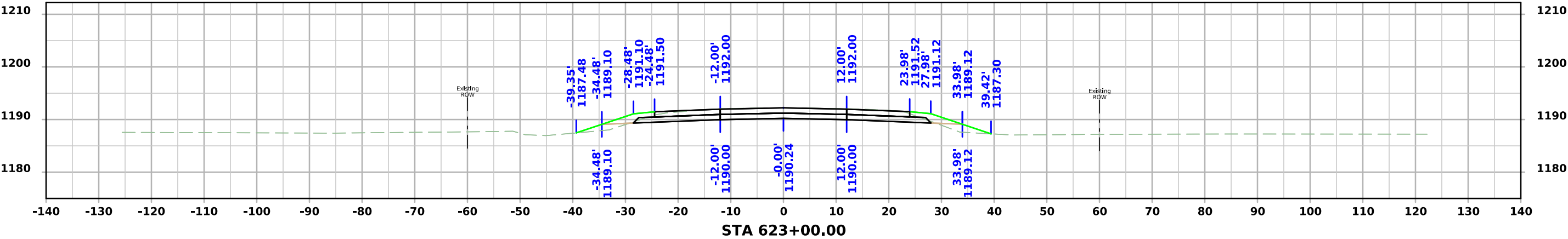
CROSS SECTIONS
LEGEND AND INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)

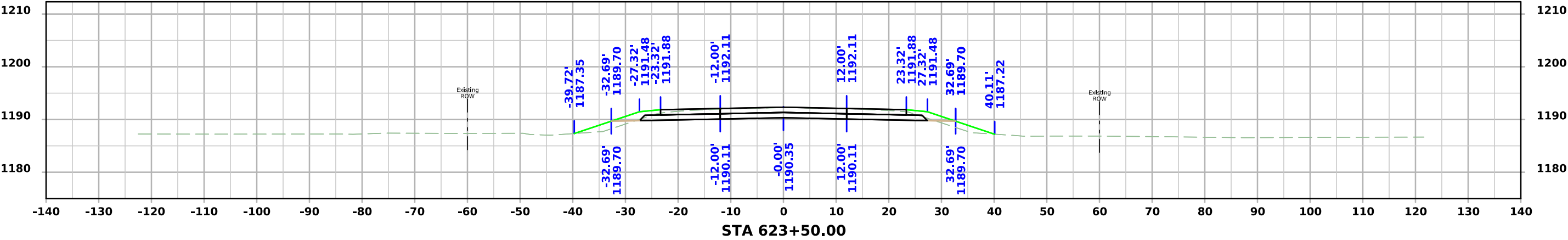
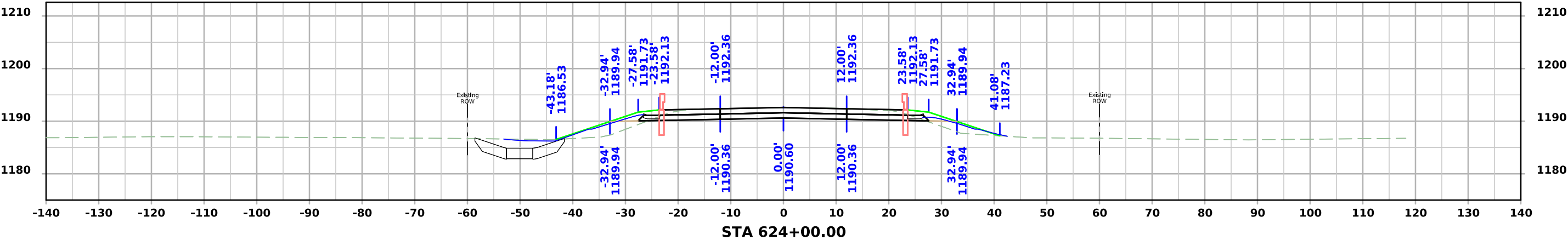
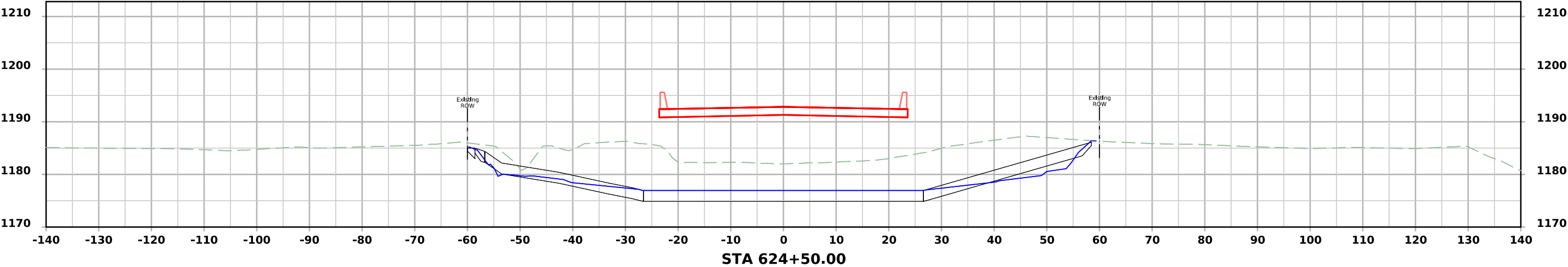
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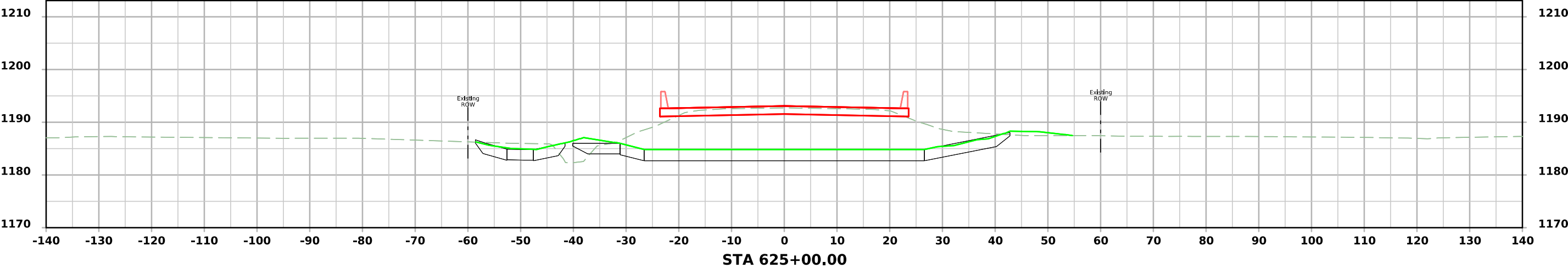
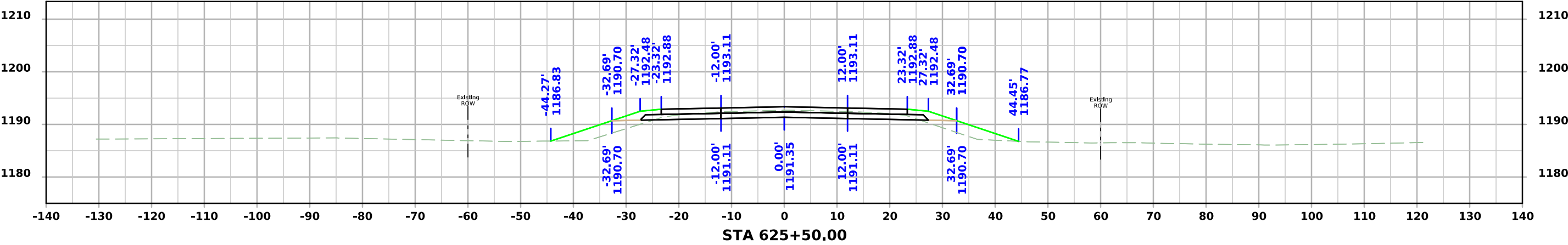
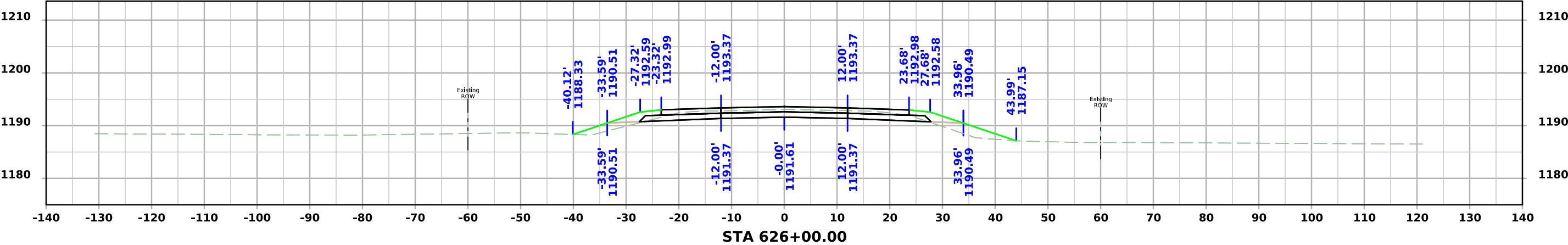
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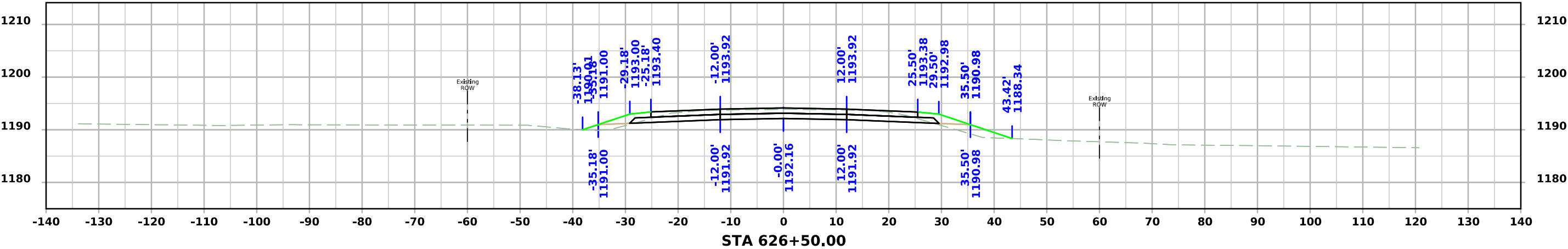
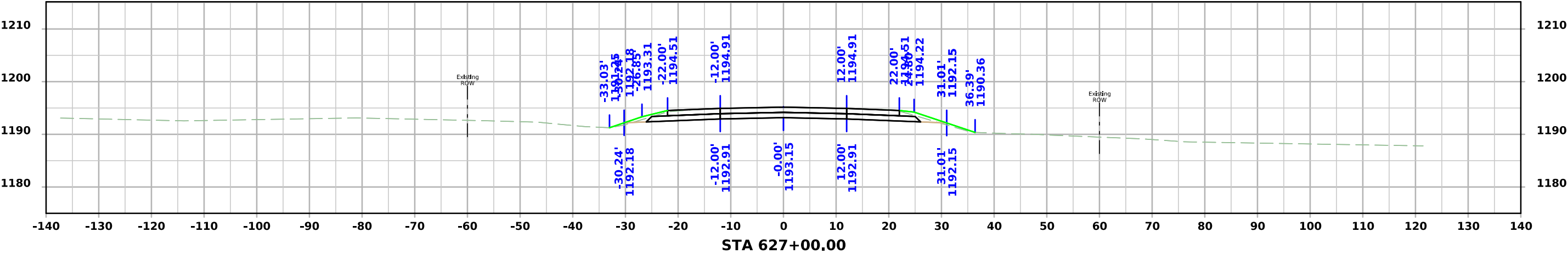
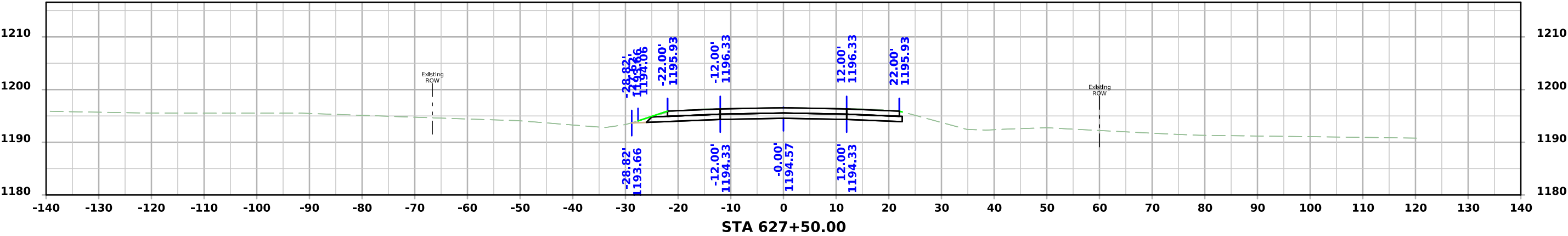
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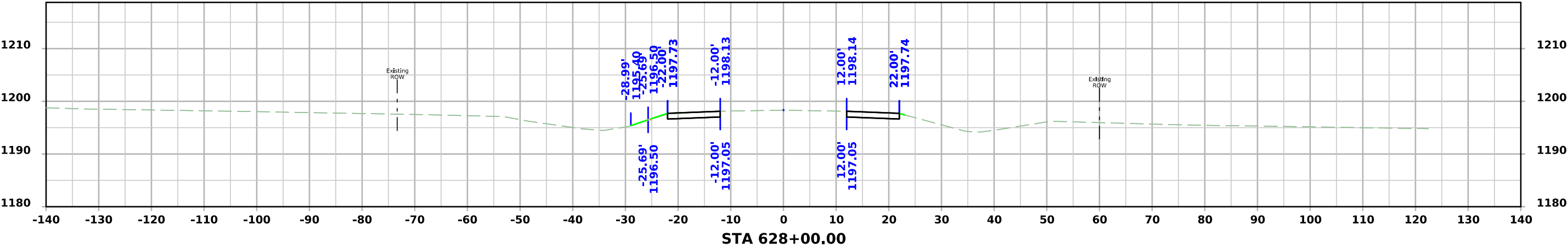
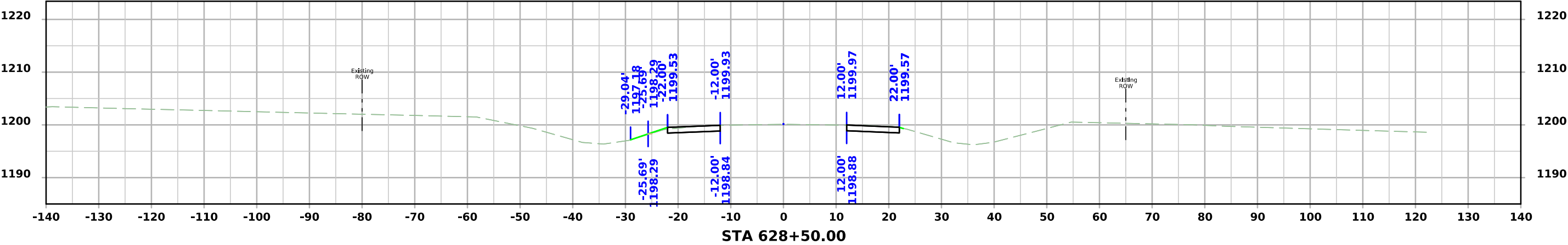
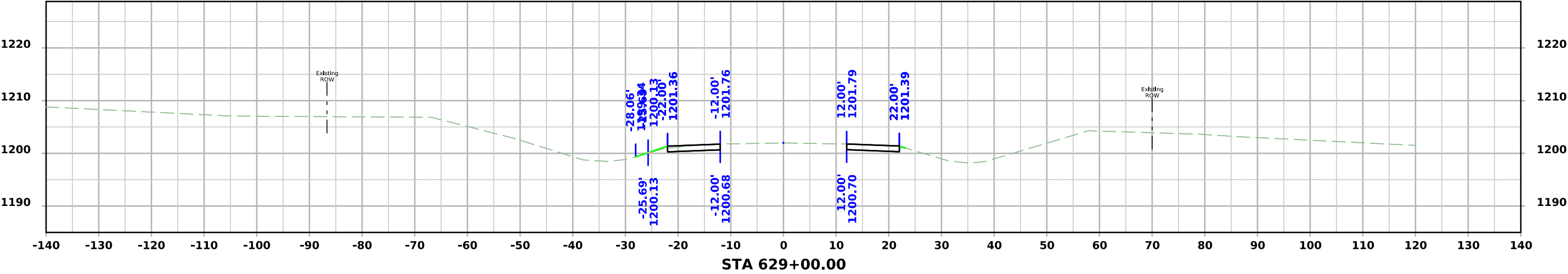
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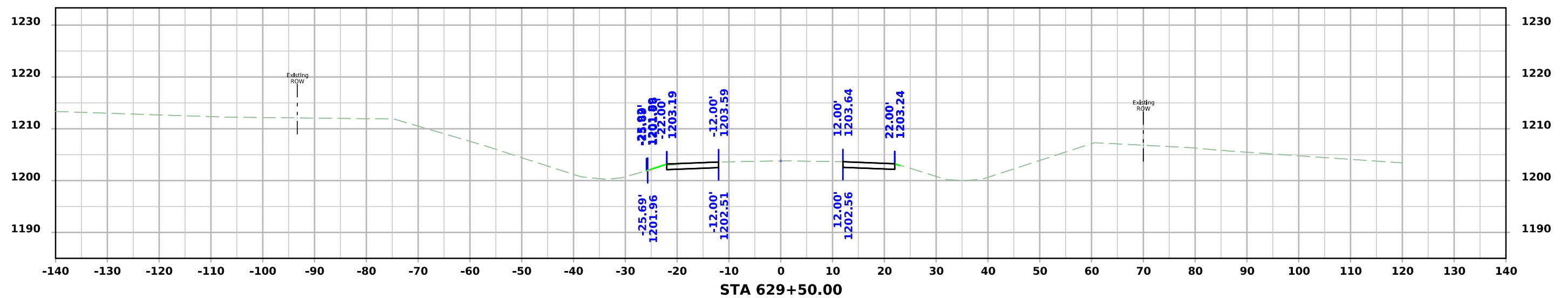
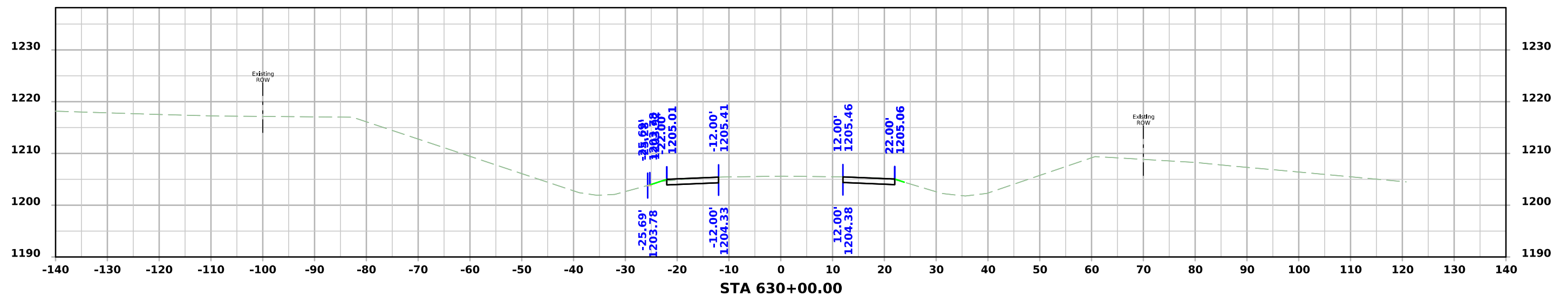
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